# Damaged Relations: How Treaty Withdrawal Impacts International Cooperation*

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**Abstract**

This paper examines how treaty withdrawal affects international cooperation. By terminating its treaty commitments, the exiting state could earn a reputation for unreliability, making other states less willing to cooperate with it. However, states' reactions to withdrawal vary markedly, even though it is public behavior. I develop an experiential theory of international cooperation that explains this variation. I argue that withdrawal damages the exiting state's relations with other treaty members, causing them to ratify fewer agreements with it in the future. I test this theory using an original dataset of all treaties registered with the United Nations and a case study of France's exit from NATO's status of forces agreement. I find that withdrawal reduces treaty members' ratification of agreements with the exiting state by 7.9% in the seven years after exit. This effect increases with the salience and material cost of withdrawal and can spill across issue areas.

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# 1 Introduction

Several states have recently walked away from their international commitments unilaterally. The United Kingdom voted to leave the European Union in 2016. Under President Donald Trump, the United States withdrew from the Intermediate-Range Nuclear Forces Treaty, the Paris Climate Agreement, and the Open Skies Treaty, among others. Likewise, Burundi and the Philippines exited the International Criminal Court and South Africa and The Gambia nearly followed suit. These developments have prompted fears of new arms races (Gearan, Sonne and Morello, 2019), the unraveling of other treaties (Reif, 2019), and the broader decline of the liberal international order (Ikenberry, 2018). Are such fears overblown? Does unilateral treaty withdrawal undermine future international cooperation?

In this article, I show that withdrawal inhibits cooperation among some states, but not others. Prevailing theories cannot explain this variation. Functionalist theories suggest that states craft escape clauses into the design of treaties to accommodate withdrawal (Chayes and Chayes, 1993, 187; Rosendorff and Milner, 2001). Other scholars argue that international cooperation is merely the byproduct of state interests and power (Downs, Rocke and Barsoom, 1996; Goldsmith and Posner, 2005). By these accounts, treaty withdrawal should not have an independent effect on cooperation. Alternatively, scholars might view withdrawal through the lens of reputation theory (Guzman, 2008; Crescenzi, 2018). From this perspective, when states withdraw from treaties they signal that their commitments are not credible, making it more difficult for them to attract partners in the future. However, withdrawal is public behavior known to all states; reputation theory is hard-pressed to explain states reacting differently to the same information (Jervis, Yarhi-Milo and Casler, 2021).

I develop an experiential theory of international cooperation that accounts for variation in the effect of unilateral exit on treaty ratification behavior. Unilateral exit occurs when one state withdrawals from a multilateral agreement while other parties remain bound by it. Withdrawal affects treaty members differently from non-members in two respects. First, treaty members experience the breaking of commitments directly, damaging the withdrawing

state's relations with treaty members. Second, treaty members bear the material consequences following the breakdown of cooperation. I argue that these relational and material factors interact to shape states' reactions to withdrawal. Damaged relations undermine treaty members' willingness to cooperate with the withdrawing state. When the costs of exit are high, the consequences of withdrawal can spill across issue areas.

I test my argument using an original dataset of all multilateral treaty ratifications and withdrawals recorded in the *United Nations Treaty Series*. This dataset drastically broadens our perspective on the dynamics of multilateral cooperation.[1] From 1945 through 2010, states deposited 74,255 instruments of ratification to 2,579 multilateral treaties, but only exited unilaterally on 572 occasions. One state exiting an agreement increases the likelihood that others will follow suit (von Borzyskowski and Vabulas, 2019); therefore, I focus my analysis on the 222 initial unilateral exits to avoid the bias that would be introduced by states anticipating subsequent withdrawals. I apply a difference-in-differences design to these exits, comparing the rate at which treaty members and non-members ratify agreements with the withdrawing state in the years before and after exit occurs. I find that state parties to the affected treaty respond to withdrawal by entering into fewer agreements with the withdrawing state. Withdrawal does not have a similar impact on non-members' behavior.

I use a mixed-methods approach to investigate the mechanisms driving these aggregate trends. My experiential theory predicts that the effect of exit on treaty members' behavior is increasing in both the salience and cost of withdrawal. I show statistically that the effect of exit on cooperation persists within issue areas, but only withdrawals from security and economic agreements spill across issue areas. I also show that more salient withdrawals have a greater effect on treaty members' behavior than less prominent withdrawals. I complement these analyses with a case study of France's 1966 withdrawal from the NATO status of forces agreement. Although NATO members were aware of French intentions to withdraw,

[1] For instance, Lupu (2013) studies 280 agreements deposited with the United Nations Secretary-General and Koremenos (2016) randomly samples 234 agreements from the UNTS.

they nevertheless reacted angrily and sought to punish France for terminating its treaty commitments. Case evidence underscores the importance of relational factors in explaining the consequences of exit.

Political science offers explanations for why states exit and enter international organizations and treaties (von Borzyskowski and Vabulas, 2019; Kelley and Pevehouse, 2015) and why these institutions sometimes decline or die (Gray, 2018; Eilstrup-Sangiovanni, 2021). I tie these literatures together to explain how exit shapes cooperation among states. By explaining why it matters *with whom* commitments are broken, my experiential theory uncovers a relational logic of international cooperation, revealing how changing diplomatic relations contribute to the evolution of international law. I also explain when the consequences of unilateral exit extend beyond the affected issue area and support this argument empirically. As far as I know, I present the first statistical evidence showing that states terminating their commitments has cross-issue area spill overs, a point of longstanding theoretical debate (Schelling, 1966; Downs and Jones, 2002; Press, 2007; Weisiger and Yarhi-Milo, 2015).

Policymakers often cite the costs of international commitments when justifying withdrawal. The Leave campaign asserted the UK sent £50 million per day to the EU. President Trump's "America First" agenda held that the US paid too much and got too little for its contributions to global governance. Policymakers perceive withdrawal as an easy way to save money and reclaim sovereignty. This article demonstrates that such a narrow accounting ignores withdrawal's broader repercussions on foreign relations. States' capacity to get what they want in the world depends on their ability to attract cooperative partners – on their power to convene. Even if exit provides some short-term benefit, costs accrue through cooperation lost. This finding applies across issue areas as diverse as economics and human rights and across states both weak and strong.

# 2 How Unilateral Exit Shapes Cooperation

This article explains how a particular type of treaty withdrawal – unilateral exit – impacts international cooperation. Unlike withdrawals that are coordinated with other states, such as the collective termination of the Warsaw Pact in 1991, unilateral exits are politically contentious cases in which one state withdrawals from a multilateral agreement while other parties remain bound by it, producing an asymmetric change in states' legal obligations (Helfer, 2019). I define international cooperation as states entering into public written agreements with one another, including treaties and executive agreements.[2] I argue that treaty membership is key to explaining the impact of unilateral exit on international cooperation, because membership magnifies the relational and material consequences of withdrawal. I explain each consequence in turn.

## 2.1 Relational Consequences

Treaties vary greatly in terms of depth and breadth, with some merely codifying existing policy (Goldsmith and Posner, 2005, 134). Nevertheless, all treaties restrict sovereignty by limiting policy autonomy (Thompson, Broude and Haftel, 2019). When states ratify a multilateral treaty, they self-categorize into a group of states defined by their shared legal commitments. With limited external enforcement, treaties are inherently social contracts in which states agree to cooperate with *one another* (Hooghe, Lenz and Marks, 2019, 130–131). States take these agreements seriously, devoting considerable time and resources to their negotiation. This is borne out by research showing that states feel a moral obligation to keep their treaty commitments (Kelley, 2007).

[2] Cooperation takes many forms, including informal agreements, customary international law, and secret alliances, but in these cases entry and exit decisions are neither well-defined nor observable to external actors (Donaldson, 2017). These forms of cooperation fall outside the scope of my argument.

These obligations shape states' reactions to withdrawal. For treaty members, unilateral exit is an instance of one state renouncing its shared obligations rather than working within existing processes to address its concerns.[3] As Davis notes, withdrawal "worsens the breakdown of cooperation by signaling disdain for both the process and [its] participants" (2021). Just as the mutual ratification of treaties allows states to identify more closely with one another (Wendt, 1999), which fosters multilateral cooperation (Hemmer and Katzenstein, 2002), unilateral exit damages the relationships upon which cooperation is based.

Exit also leads members to defend their ongoing commitment to the treaty. Mounting a public defense both entangles members directly in withdrawal's diplomatic fallout and generates coverage of the event by domestic media. Recent research shows that direct diplomatic involvement and increased media coverage can magnify the impact of an event on states' willingness to trust and cooperate with one another (Mutz, 2021; Yarhi-Milo, 2013, 12). Moreover, publicly pledging to uphold the treaty reinforces states' normative commitments (Schimmelfennig, 2001), further distancing treaty members from the exiting state. Treaty members not only view unilateral exit as an abandonment of mutual obligations, their entanglement in its aftermath further undermines the prospects of future cooperation.

Recent cases of exit illustrate these dynamics. Despite following the rules for exit, Gebru Jember Endalew, Chair of Least Developed Countries Group, saw US withdrawal from the Paris Climate Agreement as an act of "betrayal" (Johnston, 2017). Other parties responded with "defiance" by reaffirming their treaty commitments (Sengupta, Eddy, Buckley and Rubin, 2017). Likewise, when the US exited the Iran nuclear agreement (JCPOA), other parties issued statements leading with their sense of disappointment that the US had failed to fulfill its obligations and confirming their own commitment to the accord (USIP, 2018*b*). Iran's President claimed US withdrawal had destroyed mutual trust, signaling its impact on Iran's willingness to cooperate with the US in the future (USIP, 2018*a*).

[3] Withdrawal is an exercise of "exit" rather than "voice," to use Hirschman's terms (1970).

Non-members do not experience the breaking of commitments because they are not party to the treaty. Further, there is no norm or rule prohibiting exit.[4] Just as states consent to treaties, they have the right to exit. Withdrawal is lawful, rule-bound behavior (Chayes and Chayes, 1993, 187). States include withdrawal provisions in the design of treaties, suggesting that they intend to permit withdrawal *ex ante* (Rosendorff and Milner, 2001). Choosing to exit rather than cheat may even signal that the withdrawing state intends to "play by the rules," implying it respects the norm that agreements must be kept (Helfer, 2005, 1621).

Unlike treaty members, non-members reactions to withdrawal reflect neither normative opprobrium nor diplomatic strain. Following US exit from the JCPOA, for example, Japan issued a statement not chastizing the US for its actions, but instead noting that it would be "discouraging should [US withdrawal] have a major impact that makes the continuation of the JCPOA difficult" (USIP, 2018*b*). Australian Prime Minister Malcolm Turnball downplayed the normative implications of US actions by emphasizing their predictability: "Well, certainly we regret the decision of the US, although of course President Trump had promised that, foreshadowed that, for a long time" (Ibid.).

The effect of unilateral exit on cooperation, in short, depends on *with whom* commitments are broken. Withdrawal damages the diplomatic relationships between treaty members and the exiting state, undermining their willingness to enter into agreements with it in the future. Non-members neither experience the breaking of shared commitments nor are implicated in the political and legal fallout of withdrawal.

## 2.2 Distributional Consequences

The costs of unilateral exit are also different for treaty members and non-members. Unilateral exit can impact the distribution of material benefits across states by producing an asymmetric change in states' legal obligations, benefitting the withdrawing state relative to remaining treaty members (Helfer, 2019, 106). Prior research has shown that the nature of strategic

[4] Except for a few human rights treaties that preclude withdrawal (Tyagi, 2009, 117).

interactions varies by issue area (Martin, 1992). Building on Koremenos (2016), I argue that distributional consequences of unilateral exit varies across the issue areas of security, economics, human rights, and the environment.

There are direct costs to treaty members when a state exits unilaterally from security or economic agreements. Security cooperation is classically modeled as an iterated prisoners' dilemma marked by a concern for relative gains. States are vulnerable to opportunism when they abide by security agreements, because other states may gain an advantage by exploiting their cooperation (Jervis, 1978). Similar issues apply to trade and economic cooperation, where states adjust their trade policies in order to gain the benefits of comparative advantage, but in doing so make themselves vulnerable to protectionist policies if their trading partners renege on their commitments (Bagwell and Staiger, 2002). Even when agreements create excludable goods that can be denied to withdrawing states, exit has direct consequences for treaty members' wellbeing.

The distributional consequences of unilateral exit are less direct in the areas of human rights and the environment. International environmental cooperation is akin to public goods games, meaning the costs of unilateral exit are more diffuse and long-term, such as those resulting from treaty members bearing the costs of pollution or overfishing (Barrett, 2006). Likewise, exit from human rights agreements produces relatively few international externalities, because these agreements primarily resolve domestic-level commitment problems (Moravcsik, 2000).

This variation in distributional consequences matters for how states react to unilateral exit. When the distributional costs of exit are low, as in the case of human rights, states experience little change in the material incentive to cooperate. When they are diffuse, as in the case of environmental public goods, the consequences of exit for treaty members and non-members converge. Treaty members also have little incentive to engage in intra-issue reciprocity in the areas of the environment and human rights, because the withdrawing state cannot be excluded from public goods (Brewster, 2013, 533). When the distributional

consequences of exit are direct, states are more likely to take costly action to retaliate and less likely to free ride on others' punitive actions, helping resolve what Thompson calls the "sanctioners' dilemma" (2009). Withdrawals from direct cost treaties are therefore more likely to impact cooperation than withdrawals from diffuse cost treaties.

## 2.3 Alternative Explanations

Although the consequences of exit on international cooperation remain unexplored in legal and political science scholarship,[5] two theoretical arguments follow from existing research. One stems from the literature on reputation. Reputations are "any belief about a trait or behavioral tendency of an actor based on past actions" (Dafoe, Renshon and Huth, 2014, 372-373). The central thread of reputational theories is that other actors are more likely to view a state's commitments as credible if that state has a track record of keeping its commitments (Downs and Jones, 2002). Applied to unilateral exit, reputation theory provides a straightforward prediction: exit signals that treaty ratification does not credibly tie the withdrawing state's hands, bringing into question the reliability of its commitments. Other states will therefore be less willing to cooperate with states that exit treaties unilaterally.

An alternative account views cooperation as epiphenomenal, merely the byproduct of domestic politics or the distribution of power (Krasner, 1982). Research has shown that as state power and interests evolve, so too does the ratification of international agreements (Downs, Rocke and Barsoom, 1996). For example, when new leaders come to power, they bring with them new political preferences, changing states' compliance with treaties (Gray and Kucik, 2017). Similarly, unilateral exit may not have an impact on cooperation by itself, but may instead reflect a shift in the underlying political circumstances that made cooperation possible in the first place (Goldsmith and Posner, 2005). This byproduct argument suggests that unilateral exit does not have an independent effect on international cooperation.

[5] Jurado, León and Walter (2021) is an exception that focuses on the case of Brexit.

## 2.4 Empirical Implications

Experiential theory offers empirical predictions distinct from these alternative explanations. Three implications follow from the relational consequences of withdrawal. First, withdrawal should have a disproportionate negative impact on treaty members' willingness to enter into agreements with the withdrawing state because of their shared commitment to the treaty. Second, this difference should be increasing in the *salience* of withdrawal – that is, how much public attention it garners (Spirig, 2023, 55). The more salient the exit, the more entangled members are in its political and diplomatic fallout, and the greater the damage to relationships necessary for subsequent cooperation. Finally, the effect should persist irrespective of the material consequences of exit, because it is driven, in part, by states' reactions to the breaking of mutual obligations.

Distributional considerations suggest that these consequences will vary by issue area. Unilateral exit from treaties with direct (diffuse) distributional consequences will have a greater (smaller) impact on treaty member behavior. Withdrawals from economic or security treaties should have more far-reaching impact on cooperation than withdrawals from human rights or environmental agreements.

The byproduct argument indicates that cooperation between the withdrawing state and treaty members will deteriorate when the political circumstances that initially made cooperation possible change. This provides two empirical implications. First, states often take the "outside option" following the failure to negotiate reforms (Lipscy, 2017); unilateral exits are, therefore, often foreshadowed by political posturing, negotiations, and threats, rarely are they unanticipated.[6] This suggests that shifts in cooperation will typically precede the announcement of withdrawal. Second, if treaty ratification and compliance is politically inconsequential (Downs, Rocke and Barsoom, 1996), then exit should also have no independent impact on cooperation.

Reputation theory implies that "external observers" update their beliefs about others in a

[6] The Brexit referendum's surprising outcome is the exception that helps prove this rule.

Bayesian-like manner just like those who experience the breaking of commitments firsthand (Kydd, 2005, 5). This suggests that treaty members and non-members alike will adapt their levels of cooperation with the withdrawing state upon learning that its commitments may not be reliable. Beyond this general hypothesis, reputation theory is embroiled in longstanding debates over how far the consequences of breaking commitments extend. Some scholars argue that the consequences of a state breaking its commitments are widespread, cutting across contexts, time, and interactions with different actors (Schelling, 1966; Weisiger and Yarhi-Milo, 2015, 481). Others contend that reputations either do not matter (Press, 2007) or that states have multiple reputations that vary across contexts and issue areas (Downs and Jones, 2002, S97).

My argument differs from reputation theory by distinguishing between the effects of direct experience and secondhand information on state behavior. The closest related research concerns reputation and alliances formation (Gibler, 2008); Crescenzi, Kathman, Kleinberg and Wood (2012), in particular, argue that states draw inferences about another's reliability from its past interactions involving comparable states whose foreign policies are similar to their own. My argument is that states' *own* past interactions have a greater impact on behavior than inferences drawn from others' experiences. Treaty cooperation is well-suited to test these contrasting predictions. A key feature of the international laws governing treaties is that withdrawal is public behavior, known by all states. This has been the case since the first global registry was created by Article 18 of the Covenant of the League of Nations, a practice that was continued by Article 102 of the UN Charter and later strengthened by the Vienna Convention on the Law of Treaties.[7]

Figure 1 presents stylized representations of these theories' observable implications, illustrating how each theory predicts the level of cooperation toward the withdrawing state by treaty members and non-members to change over time. The grey shaded region in each plot represents the post-withdrawal period. The solid (dashed) lines represent the level

[7] See appendix A.1 for further discussion.

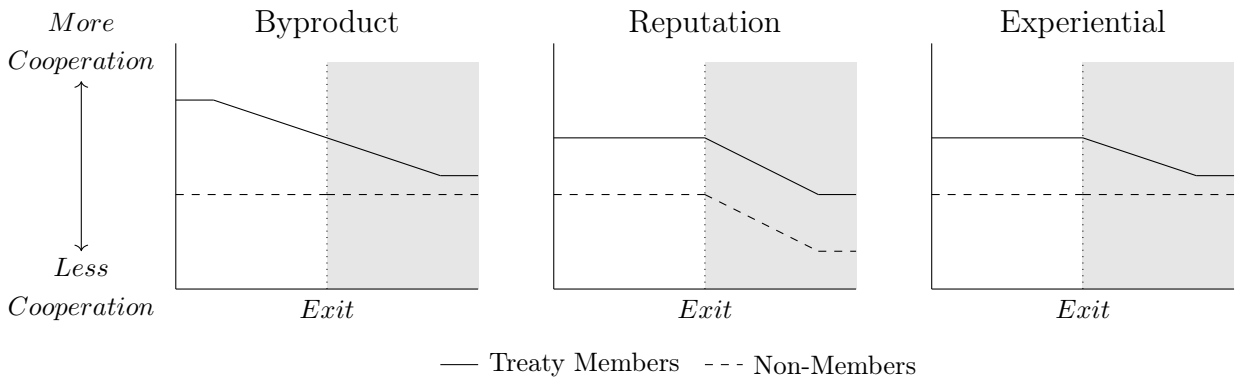


**Figure 1:** *Predicted Relationships between Unilateral Exit and Cooperation.*

of cooperation by treaty members (non-members) toward the withdrawing state. These illustrations are simplified; the theories do not specify how abrupt, durable, or severe changes in cooperation might be, nor are these theories mutually exclusive. For instance, acrimonious negotiations over treaty reforms may lead to fallout between treaty members prior to withdrawal, as expected by the byproduct hypothesis, and treaty non-members could become less willing to cooperate with the withdrawing state after exit, as suggested by reputation theory. Nevertheless, each theory provides distinct predictions concerning *whose* cooperation with the withdrawing state changes and *when*.

# 3 Data and Measurement

To test these theories, I collect data concerning states' entry and exit from the 2,579 multilateral treaties with at least one ratification reported in the *United Nations Treaty Series* (UNTS) from 1945 through 2010. The UNTS is the public registry of treaties established by Article 102 of the UN Charter. Although state compliance with the requirement to deposit all ratifications, withdrawals, and other such actions is imperfect and not all interstate agreements qualify as treaties, the UNTS is the most authoritative source of state treaty commitments (Donaldson, 2017).[8]

[8] Appendices A and C discuss the data's collection, coding, and limitations.

The 2,579 treaties consist of 74,255 unique ratifications and 1,430 withdrawals. I classify 572 of these withdrawals as unilateral exits and 222 as *initial* unilateral exits. I use UN subject tags to categorize treaties by issue areas, identifying 244 security, 454 environmental, 1,049 economic, and 396 human rights treaties in the dataset. These categories are not mutually exclusive. I begin my analysis in 1945, because this is when states were first required to deposit treaty information with the UNTS. I end my study in 2010, because there is often a delay between when treaties are concluded and their deposit in the UNTS.

My unit of analysis is the directed-dyad year. Observations represent the actions taken by one state (the ratifying state) toward another (the withdrawing state) per year. For each unilateral exit, I take the set of directed-dyads in which the withdrawing state is the recipient state for the ten years before and after the year of withdrawal. Observations for each withdrawal are combined into one dataset.

My treatment variable measures if a state is a member of a treaty from which another state exits unilaterally, taking 1 beginning the year withdrawal is announced and is 0 otherwise. To measure a state's level of cooperation with the withdrawing state, my outcome variable, I count the number of treaties the state ratifies each year to which the withdrawing state is *already* a member. I refer to this variable as "joins." For instance, in 1975 Canada ratified four treaties that the US had already ratified; therefore, this variable for the Canada→US directed-dyad in 1975 is equal to four. To ensure that my results are not driven by outliers, I use the logged count of joins per directed-dyad-year rather than the raw count.

I stress three characteristics of the data. First, the UNTS appears more likely to include withdrawals that comply with the terms of an agreement than those that do not.[9] Cases of *de facto* exit, those in which states stop complying with a treaty but never submit an instrument of withdrawal, are unobserved. Second, the UNTS says nothing about why states leave agreements; however, downstream consequences likely depend on the perceived legitimacy of

[9] In only 2 of 222 cases does the timing of notification and entry into force not align with the treaty's withdrawal clause; see appendix A.1 for discussion.

withdrawal. A state exiting a defunct regional economic organization would presumably evoke less backlash than one withdrawing from an alliance during war. Finally, the UNTS includes both substantively meaningful withdrawals as well as exits from treaties lacking political significance. The omission of controversial *de facto* exits and the inclusion of unobjectionable and substantively insignificant withdrawals will attenuate estimates of withdrawal's effect on subsequent cooperation in the set of observed cases.

# 4 Research Design

I use a difference-in-differences research design that leverages the timing of withdrawal and the networked structure of multilateral international law to assess how unilateral exit relates to patterns of interstate cooperation. Unlike bilateral agreements where states enter and exit agreements in lockstep, the membership of multilateral agreements changes sequentially, allowing a direct measurement of when states leave others behind in treaties as well as when they choose to ratify agreements that already include certain state parties.[10] This research design allows me to assess how the rate of joining treaties with the withdrawing state varies between treaty members and non-members before and after unilateral withdrawal.

Figure 2 illustrates this research design for a simplified case of seven states ($A$-$G$) cooperating across three treaties (Tr 1-3) in three time periods. Period $t = -1$ represents the structure of the network prior to withdrawal. State $C$ is already a member of Treaties 1, 2, and 3 at the start of this period (as represented by the black lines); during this period, states $A$-$G$ join state $C$ in these treaties (as represented by the green and orange lines; colored lines

[10] Analysis of bilateral treaties is problematic for two reasons. It is typically unclear if one or both states initiated the termination of bilateral agreements in the UNTS, making unilateral exit observationally equivalent to cooperative exit. Second, decreased bilateral cooperation after withdrawal could be attributed the withdrawing state, the other state, or both. These empirical issues aside, experiential theory could apply to bilateral settings.

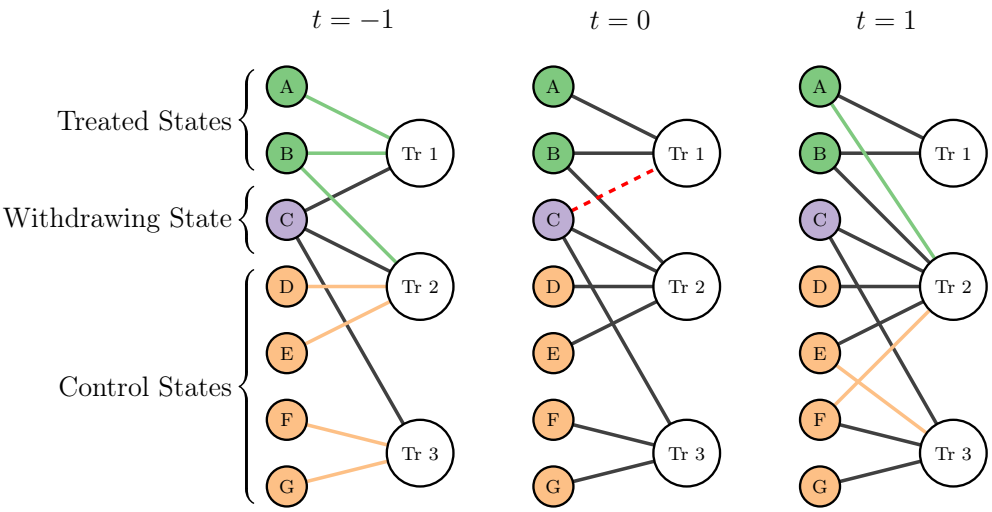


**Figure 2:** *Illustration of Research Design.*

signify new ratifications in each period). In period $t = 0$, state $C$ withdraws from Treaty 1 (represented by the purple node with a red dashed line). All other lines are colored black in $t = 0$, because these memberships existed prior to this period. State $C$ withdrawing from Treaty 1 assigns states $A$ and $B$ to the treatment group (green nodes), because they are both members of Treaty 1. Likewise, states $D$, $E$, $F$, and $G$ are assigned to the control group (orange nodes), because they are in at least one treaty with state $C$, but are not members of the affected treaty. In the post-withdrawal period, $t = 1$, states $A$ and $F$ join state $C$ in Treaty 2 and state $E$ joins state $C$ in Treaty 3.

Using this research design, we can assess changes in the ratification practices of treaty members relative to non-members. In Figure 2, the two treaty members (states $A$ and $B$) ratify three treaties already ratified by $C$ in the pre-withdrawal period, meaning that the average rate of joins among treaty members during the pre-treatment period ($\overline{Y}_{\{\text{pre, treated}\}}$) is 3/2. Corresponding quantities can be obtained for the average rate of joins among treaty members in the post-withdrawal period ($\overline{Y}_{\{\text{post, treated}\}} = 1/2$) and for treaty non-members in both periods ($\overline{Y}_{\{\text{pre, control}\}} = 4/4$; $\overline{Y}_{\{\text{post, control}\}} = 2/4$).

In a two-period setting these quantities correspond with a difference-in-differences design. In Figure 2, the difference-in-differences estimate is $\hat{\delta}_{DD} = \overline{Y}_{\{\text{post, treated}\}} - \overline{Y}_{\{\text{pre, treated}\}} -$

$\left(\overline{Y}_{\{\text{post, control}\}} - \overline{Y}_{\{\text{pre, control}\}}\right) = -1/2$, meaning that, on average, one out of every two treaty members decide not to ratify – or opt out of – a multilateral treaty to which the withdrawing state is already a member in the period following withdrawal. I log the raw count of joins in the analyses that follow, so estimates are interpreted as a $100 \times \hat{\delta}_{DD}$ percent change in joins.

In the real world there are multiple periods and unilateral exits are staggered over time. The conventional econometric approach to estimating the effect of a time-varying treatment is to use the two-way fixed effects estimator; however, this approach is biased in the context of repeated treatments (Imai and Kim, 2021). I use a difference-in-differences estimator developed by Imai, Kim and Wang (2021) designed for such a data structure. The method involves two steps prior to estimation. I first select for each treaty member $(it)$ a set of matched non-members $(M_{it})$ with identical treatment histories in the four $(L)$ years prior to exit. I then refine these matched sets by removing non-members with covariate or outcome histories too different from the treaty member. After refinement, I apply the estimator:

$$\hat{\delta}(F, L) = \underbrace{\frac{1}{\sum_{i=1}^{N}\sum_{t=L+1}^{T-F} D_{it}} \sum_{i=1}^{N}\sum_{t=L+1}^{T-F} D_{it}}_{\text{Average over all treaty members}} \underbrace{\left\{ (Y_{i,t+F} - Y_{i,t-1}) - \sum_{i' \in M_{it}} \omega_{it}^{i'} (Y_{i',t+F} - Y_{i',t-1}) \right\}}_{\text{Treaty member-specific estimate}}$$

where $D_{it}$ equals 1 if $it$ is a treaty member in the year of withdrawal and $\omega_{it}^{i'}$ is the weight assigned to each non-member matched to $it$. Intuitively, each matched set is used to calculate a difference-in-differences estimate for each treaty member. The final estimate is the average of these treaty member-specific estimates. I report seven $(F)$ estimates for each period from the year of exit $(t + 0)$ through the sixth-year post-withdrawal $(t + 6)$.

Credible inference depends on the parallel trends assumption, which implies that joins by treaty members and non-members would have followed similar trajectories had withdrawal not occurred. This assumption could be violated, for instance, by timing issues in which treaty members begin to withhold cooperation in anticipation of withdrawal. Furthermore, a fair test of reputation theory depends on the comparability of treaty members and non-members.

As suggested by research on alliance formation (Crescenzi et al., 2012), withdrawal is not equally relevant to all states; some non-members, especially those that cooperate infrequently with the withdrawing state, are unlikely to change their behavior after exit.

To improve the credibility of this comparison, I use Mahalanobis distance matching to pair treaty members with comparable non-members using states' characteristics and their level of cooperation with the exiting state in each of the four years before withdrawal. I match on three measures of pre-withdrawal cooperation with the exiting state: first, the outcome variable, joins; second, the logged number of treaties that a state and the withdrawing state have both ratified; and, third, the logged number of treaties that the withdrawing state has ratified but that the ratifying state has not. Matching on these variables ensures that treaty members and non-members cooperate with the withdrawing state to a comparable degree and that both groups have similar opportunities to join the withdrawing state in agreements after exit. I also match on the pre-withdrawal log of total trade between the ratifying state and the withdrawing state, because of the preponderance of economic treaties, and pre-withdrawal state-level characteristics associated with the ratification of multilateral treaties: the ratifying state's composite index of national capabilities, level of democracy, major power status, the number of years since its last regime change, and the log of its total annual trade (Singer, 1987; Barbieri and Keshk, 2016; Marshall, Gurr and Jaggers, 2017).

Figure 3 illustrates covariate balance and parallel trends. Matching improves the comparability of treaty members and non-members; after matching, the standardized mean difference in joins is less than 0.14 in each of the four years before withdrawal, and the maximum difference across all covariates is 0.27.[11] Likewise, joins follow a consistent trajectory before exit, depicted by the black lines in Figure 3, suggesting that the parallel trends assumption holds in this case. As with all observational research, unobserved differences between treaty members and non-members – such as the relative importance of an agreement to each treaty

[11] Appendix B shows that results are not sensitive to alternative refinement strategies.

member, which could affect a state's decision to ratify a treaty and its reactions to exit – may still introduce bias. However, the strong balance in Figure 3 suggests that such differences are unlikely to explain away estimated effects.

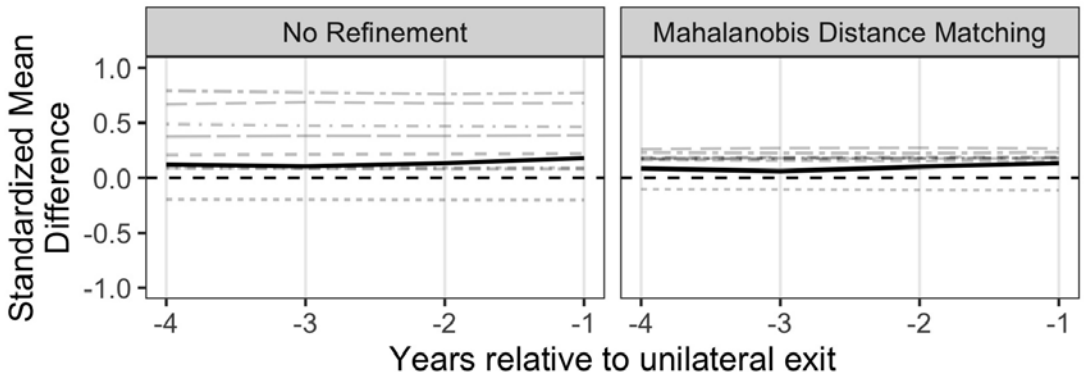


**Figure 3:** *Covariate Balance and Parallel Trends, Before and After Matching.* Horizontal lines are the standardized mean difference between treaty members and non-members for covariates (dashed grey lines) and outcomes (solid black lines) in each year before withdrawal. For reference, black dashed line is equal to no difference.

These analyses test reputation and experiential theories' contrasting expectations. Negative statistically significant estimates would provide evidence in favor of experiential theory. Estimates indistinguishable from zero would suggest that treaty members and non-members react similarly to withdrawal. I also conduct a series of placebo tests to assess if joins decrease before withdrawal, as expected by the byproduct hypothesis. To do so, I move artificially the timing of withdrawal earlier by two years and conduct the same analysis for each year up to the year of withdrawal.[12] Negative statistically significant estimates in these analyses would be consistent with the byproduct hypothesis.

I emphasize three design choices. First, because theories focus on when states learn of exit, all withdrawals are coded as occurring on the date states formally announce withdrawal, not withdrawal's date of effect. Second, the focus on initial unilateral exit reflects a tradeoff between internal and external validity. Narrowing in on the set of initial unilateral exits mitigates inferential challenges due to one exit prompting others (von Borzyskowski and

[12] Appendix G presents analyses that lead exit by one, two, three, four, and five years.

Vabulas, 2019), which could bias estimates of the effect of unilateral exit if states adapt their behavior in anticipation of future withdrawals.[13] Third, the research design guards against structural features of the data producing spurious results. The outcome variable measures *new* ratifications of treaties each year that the withdrawing state has *already* ratified. This operationalization tilts the scales against finding that treaty members reduce cooperation relative to non-members. When exit occurs, treaty members have already ratified the affected treaty in a prior year. Only non-members lose the opportunity to join the withdrawing state in the affected treaty in the post-withdrawal period. As a result, withdrawal reduces the number of treaties non-members can join with the withdrawing state, but does not have this effect on treaty members.

# 5 Exit Decreases Cooperation by Treaty Members

I begin my analysis with Figure 4, which presents ratification trends of treaty members and non-members before and after withdrawal. The grey shaded area in Figure 4 – and all subsequent figures – represents the post-withdrawal period. The solid line represents the average number of logged joins by treaty members (the green nodes in Figure 2) and the dotted line represents the same average for non-members that share at least one treaty membership with the withdrawing state (the orange nodes in Figure 2).

Figure 4 provides evidence consistent with experiential theory. It reveals an abrupt change in joins by treaty members in the years following unilateral exit. Treaty members' level of cooperation with the withdrawing state remains below pre-withdrawal levels even 10 years after exit. Joins by treaty members and non-members follow parallel trends prior to exit, suggesting that factors changing before the period of withdrawal do not account for the observed shift. This evidence goes against the expectations of the byproduct hypothesis.

[13] Appendix B shows robustness across samples, including the sample of all unilateral exits.

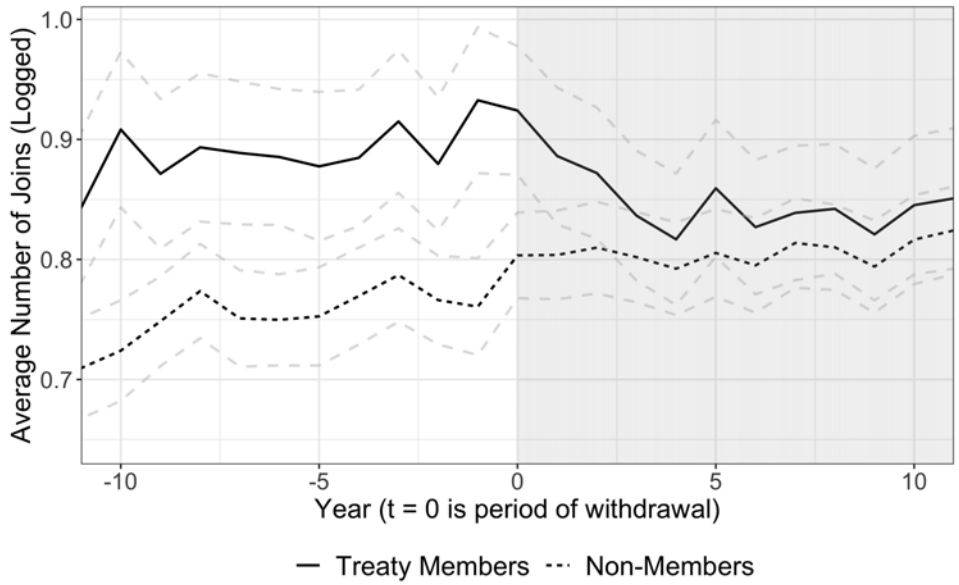


**Figure 4:** *Joins Before and After Unilateral Exit, 1945-2010.* Averages are computed for each of 222 initial unilateral exits and then combined by taking the average across cases. Shaded region represents post-withdrawal period. Grey dashed lines are point-wise 95% confidence intervals.

Cooperative behavior by treaty non-members does not change following exit.[14] The lack of decrease in joins by non-members suggests that reputational factors are not driving the shift in ratification behavior. This evidence is inconsistent with the reputation hypothesis.

Figure 5 presents the corresponding difference-in-differences analysis. I plot estimates and confidence intervals of the effect of unilateral exit on cooperation in the shaded region. Unilateral exit occurs at $t = 0$ in these models. I compute estimates for this and each of the following six years ($t = 0, 1, ..., 6$). In the unshaded region, I plot estimates and confidence intervals for a placebo exit occurring at $t = -2$ for this and each period up until the observed true exit ($t = -2, -1$).

This evidence is also consistent with the experiential theory. On average, joins by treaty members decrease 7.9% relative to non-members in the seven years after exit, ranging from 5.3% one year after exit to 9.8% four years after exit. This discrepancy between treaty

[14] Appendix B.6 confirms this statistically.

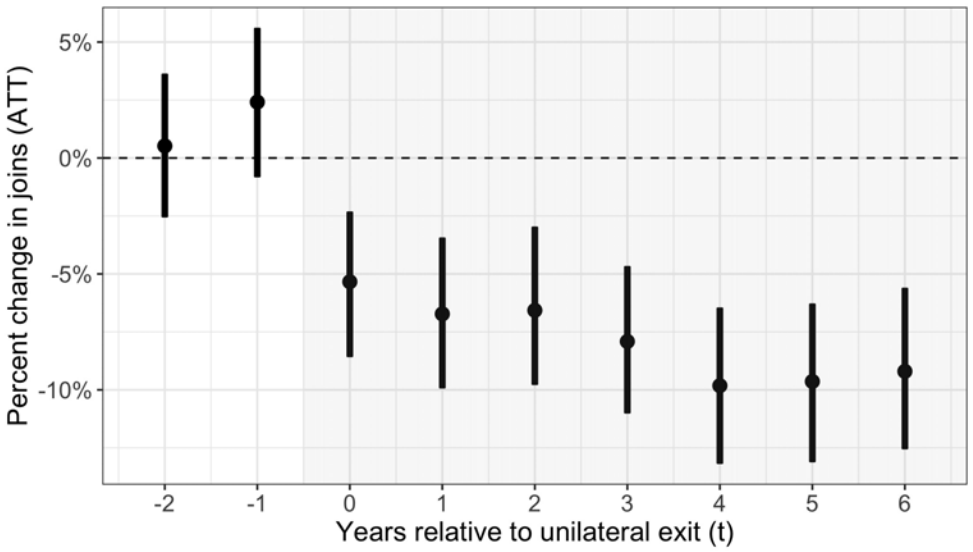


**Figure 5:** *Effect of Initial Unilateral Exit on Joins by Treaty Members, 1945-2010.* Difference-in-differences estimates of the effect of unilateral exit on treaty members plotted in shaded region. Placebo estimates are not shaded. Bars are 95% block-bootstrap confidence intervals.

members and non-members is at odds with a purely reputational theory of cooperation. Further, no placebo estimates are negative and statistically significant, casting doubt on the argument that factors preceding exit explain the observed effect on cooperation.

These estimated effects are substantively meaningful. The average treaty has approximately 25 members who each join the withdrawing state in 2.1 treaties, on average, in the year prior to withdrawal. If this trend persisted, then over the course of seven years these 25 treaty members would deposit 368 instruments of ratification for treaties that the withdrawing state has already ratified. These results suggest that we would observe 29 fewer ratifications over this seven-year period, for a total of 339 ratifications.

Changes in withdrawing states' behavior cannot account for these findings. Joins measure the ratification of treaties to which the withdrawing state is *already* a member, meaning that the shift presented in Figure 4 is due to treaty members abstaining from cooperation with the withdrawing state. Figure 6 assesses withdrawing state behavior to confirm this interpretation. I first plot joins by withdrawing states, illustrating that exit corresponds with a decrease in their engagement with international law but not a disproportionate decrease in

their cooperation with treaty members relative to non-members. I then present a difference-in-differences analysis of joins by withdrawing states, confirming that exit is not associated with a differential decrease in their ratification of treaties with treaty members.

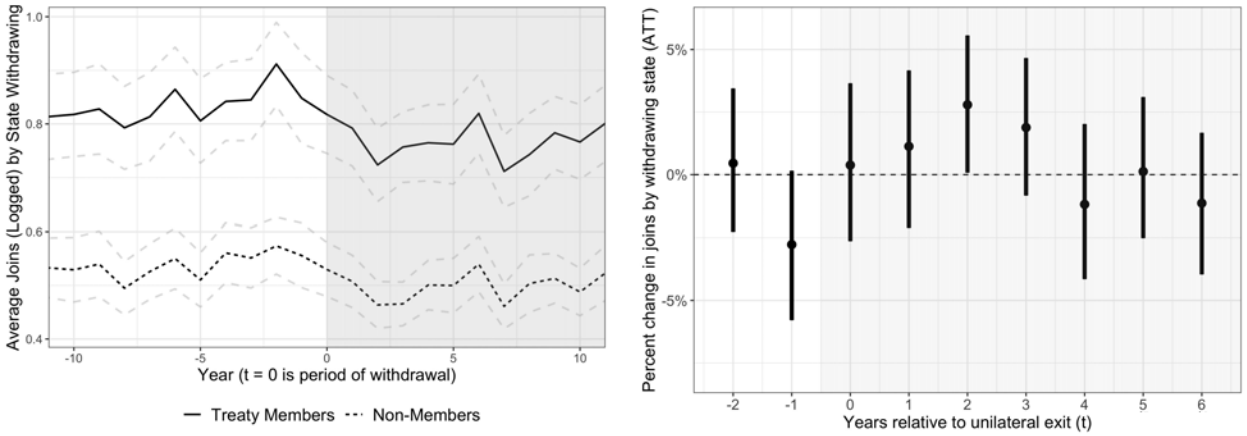


**Figure 6:** *Analysis of Withdrawing State Behavior, 1945-2010.* Left: Average logged joins by withdrawing states plotted in the same manner as Figure 4. Right: Difference-in-differences analysis of joins by withdrawing state computed in the same manner as Figure 5.

I present several supplementary analyses in appendix B to assess the robustness of these findings. I replicate my results using different covariate choices and refinement methods, a two-way fixed effects estimator, and different samples including all unilateral exits and the first unilateral exit by each state. I graph outcomes in different ways to confirm parallel trends descriptively. I exclude individual states from my sample to demonstrate that no single state is driving the results. I vary the study period to show that the relationship persists over time, although there is some temporal heterogeneity with the effect being more attenuated from roughly 1960 through 1980.[15] I show that non-members' limited response to exit is not due to a floor effect. Finally, in appendix G, I present additional placebo analyses confirming that joins do not decrease prior to withdrawal. The results of these analyses are consistent with the findings presented here.

[15] See appendix B.7 for discussion.

# 6 Evidence of Mechanisms

I now investigate the mechanisms driving these aggregate patterns through subgroup analyses and an illustrative case study. I first explore variation by issue area, showing that distributional consequences moderate the effect of exit on cooperation. I then test whether more salient withdrawals have a greater impact on cooperation. Finally, I turn to France's exit from the NATO status of forces agreement to see how decision-makers reacted to unilateral exit in a prominent case. Evidence supports the inference that unilateral exit has profound relational consequences that are moderated by its distributional effects.

## 6.1 Distributional Consequences: Variation by Issue Area

Recall that scholars disagree about whether the reputational consequences of a state breaking its commitments are context-specific or if they cut across interactions with different actors in different issue areas. Experiential theory predicts that unilateral exit should undermine cooperation both within and across issue areas, because it marks a break in the relationship upon which cooperation is built. Further, it predicts that the impact of unilateral exit on cooperation should be increasing in the distributional consequences of exit. Exits from direct cost treaties should have a greater impact on cooperation by treaty members than exits from diffuse cost treaties.

I test these predictions by classifying ratifications and withdrawals by issue area. There are 112 initial unilateral exits from environmental or human rights treaties and 129 exits economic or security agreements.[16] I classify withdrawals from economic and security agreements as "Direct Cost," because they are more likely to have direct distributional consequences for other

[16] Issue areas are not mutually exclusive. Of the 222 initial unilateral exits, 121, 77, 39, and 9 are coded as being from, respectively, economic, human rights, environmental, and security treaties; see appendix C for details. Given the limited number of withdrawals from security agreements, I focus my case study on this issue area.

treaty members. I classify unilateral exits from environmental and human rights treaties as "Diffuse Cost," because the consequences of exit from these agreements for treaty members is relatively more modest and diffuse than exit from economic and security agreements.

In Figure 7 I present difference-in-differences analyses grouped by cost. Rows present exits from treaties classified as either Direct Cost or Diffuse Cost. The "Within" column shows how trends in joins of treaties classified in the same cost category compare before and after exit. The "Across" column shows how exit from treaties in that row's cost category corresponds with joins of treaties in the other cost category. For example, the Within-Direct Cost analysis in the upper-right of Figure 7 presents estimates of how unilateral exit from economic or security agreements impacts treaty members joining the withdrawing state in agreements in these same issue areas. As before, estimates of a placebo withdrawal two years before the actual exit are presented in the unshaded region.

Evidence is most consistent with experiential theory. The pronounced effect of exit from Direct Cost and Diffuse Cost agreements on cooperation within these issue areas is suggestive of relational consequences. If only distributional consequences mattered, then we would not observe comparable change in cooperation following withdrawal from Diffuse Cost treaties. However, exit from Direct Cost treaties has a substantially larger effect on cooperation across issue areas than exit from Diffuse Cost treaties. This pattern is consistent with the inference that distributional consequences moderate the effects of withdrawal on cooperation. The effect of unilateral exit from human rights or environmental agreements on economic and security cooperation is more muted.

This evidence is difficult to square with reputation theory. All analyses suggest that treaty members react more harshly to exit than non-members. New information concerning the withdrawing state's unreliability cannot explain these patterns. It matters with whom commitments are broken.

There is limited evidence supporting the byproduct hypothesis. One placebo estimate in the Across-Diffuse Cost analysis is negative and statistically significant, suggesting that treaty

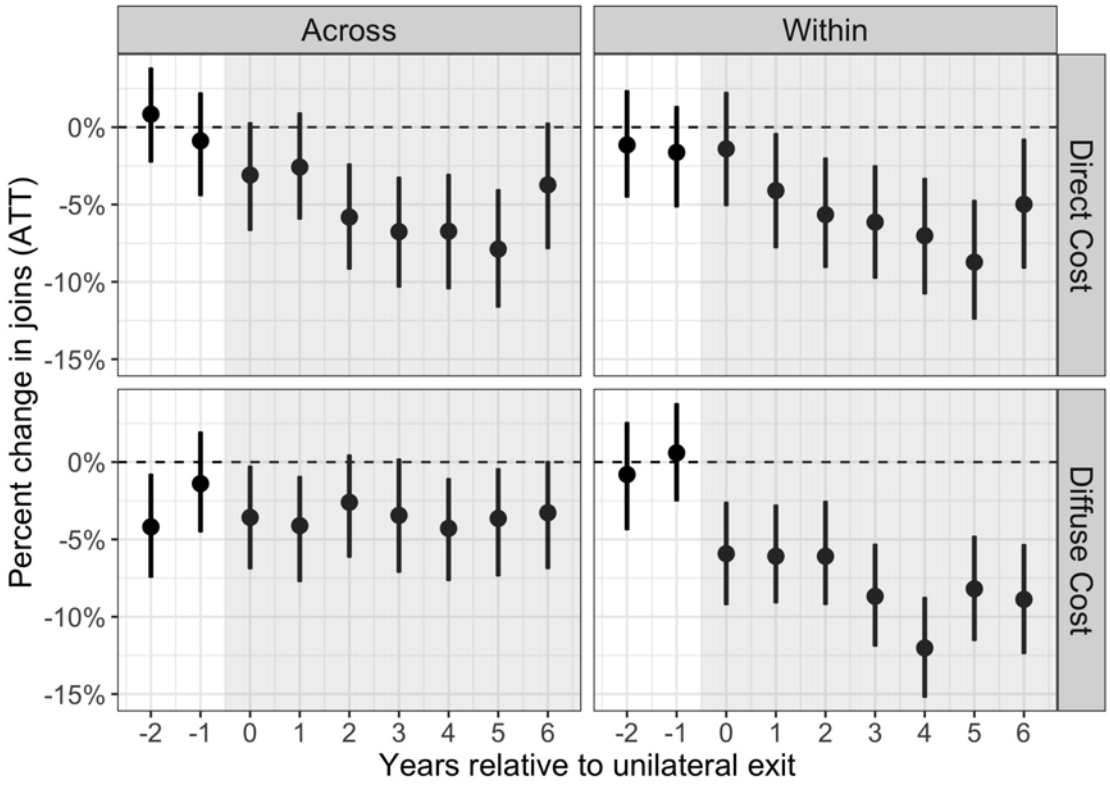


**Figure 7:** *Effect of Initial Unilateral Exit on Joins by Distributional Cost, 1945-2010.* "Within" estimates are the effect of withdrawal from treaties in that row's cost category on the ratification of agreements in the same category. "Across" estimates are the effect of withdrawal from treaties in that row's cost category on the ratification of agreements in the other cost category. Description is otherwise the same as Figure 5.

members reduce cooperation with the withdrawing state prior to exit. If anticipation does explain away any results, it is precisely where experiential theory predicts the consequences of exit are weakest: the impact of withdrawal from environmental or human rights treaties on economic and security cooperation.

I validate these findings in appendix C. I present balance in covariate and outcomes during the four years before withdrawal and plot the average of logged joins by group, both confirming the parallel trends assumption and showing that only treaty members reduce cooperation after exit. I also confirm that treaties spanning multiple issue areas are not driving my results by excluding from my analysis those that are tagged by the UN as governing both economic or security affairs *and* human rights or the environment. This reduces my

sample of withdrawals from Diffuse Cost treaties from 112 to 60 and from Direct Cost treaties from 129 to 77. In this analysis, effects in the Across analyses are less pronounced and there is similar support for the byproduct hypothesis; results are otherwise the same.

## 6.2 Relational Consequences: Variation in Salience

Some withdrawals embroil states in their legal and diplomatic aftermath; others go relatively unnoticed. Experiential theory predicts that the impact of withdrawal on cooperation should be increasing in its salience – that is, the amount of public attention it garners. All exits should have some negative impact on members' cooperation with the withdrawing state, because exit violates norms of mutual obligation; however, the magnitude of this effect should be greater when treaty members are more entangled in the diplomatic fallout of withdrawal. Unfortunately, there is no single measure of salience, especially one unrelated to costs, legal implications, and other aspects of treaty importance. Therefore, in Figure 8, I present four sets of analyses showing that this prediction persists across plausible indicators of salience.[17]

First, I show that treaty members react more strongly to exits from multilateral treaties deposited with the UN Secretary-General. The UNSG serves as a depositary only for major multilateral initiatives open to all states for ratification; therefore, treaties registered with the UNSG are generally more prominent than treaties registered elsewhere.

Second, I demonstrate that the effect of exit is greater when the withdrawing state is a major power, as coded by the Correlates of War Major Power variable. Great power exits garner more attention, making these exits more salient than other withdrawals. Evidence shows that the strong and the weak both bear the consequences of breaking their commitments. Power is no panacea when it comes to unilateral exit.

[17] Appendix D presents corresponding balance tests and descriptive analyses.

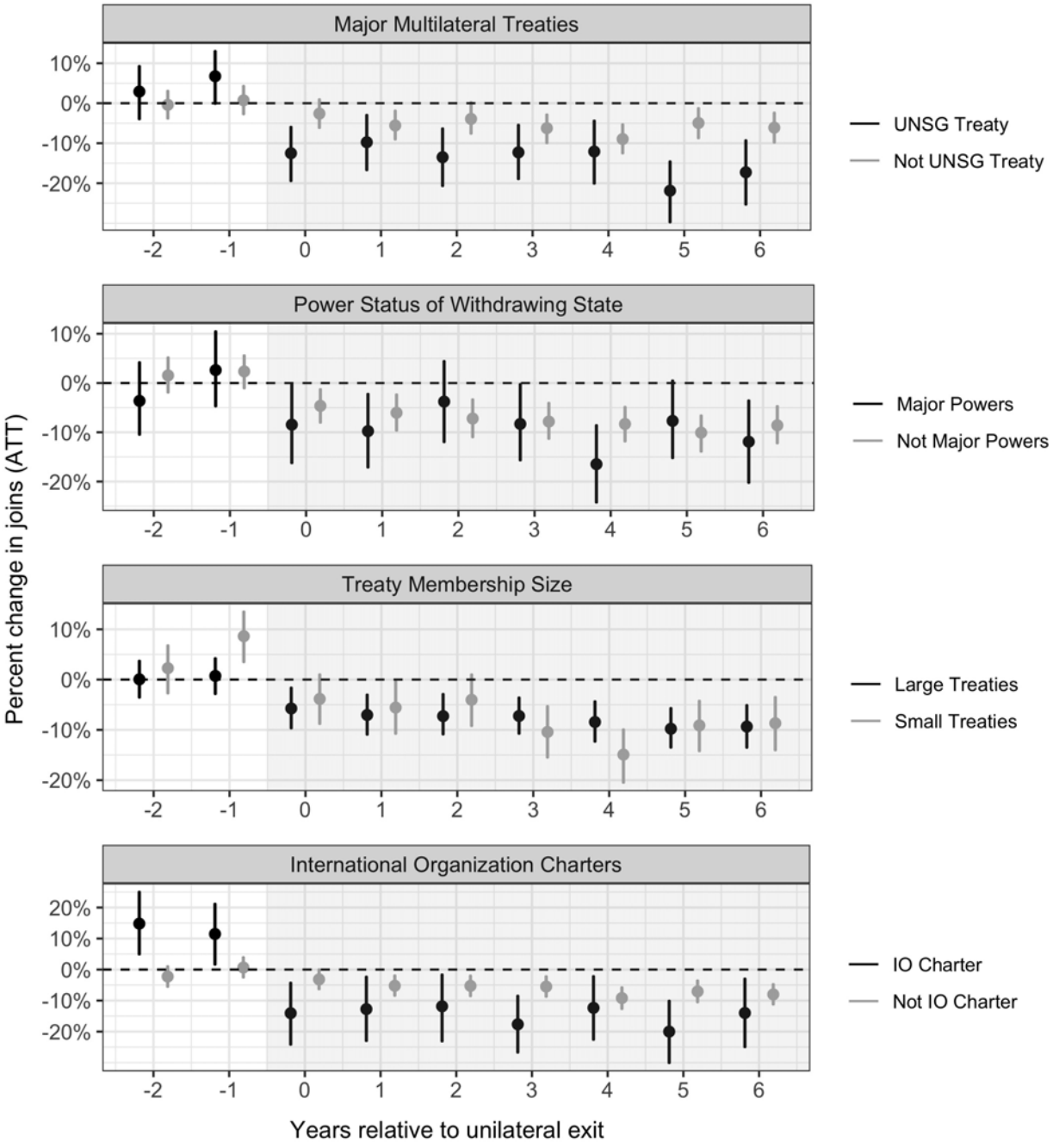


**Figure 8:** *Effect of Initial Unilateral Exit on Joins by Salience, 1945-2010.*

Third, I show that states react more strongly to exits from treaties with more members.[18] Widely ratified treaties reflect robust norms with high degrees of concordance, whereas smaller treaties tend to either be more contractual in nature or reflect stagnating legal norms (Deitelhoff and Zimmermann, 2019). This finding also rebuts a modified version of reputation theory that assumes withdrawal is known only by treaty members and, thus, asserts that information asymmetries account for the observed divergence in treaty member and non-member behavior. If this were correct, then the information asymmetries would be most pronounced in exits from smaller agreements, causing withdrawals from these agreements to have a greater effect on cooperation. Evidence shows the opposite is true.

Finally, I show that withdrawals from international organization charters, constitutions, and statutes have a greater effect on treaty member behavior than exits from other treaties. International organizations are the quintessential social forums of international political life, making exit from these institutions more salient. Together, these tests provide consistent evidence that the effect of withdrawal on cooperation is increasing in its salience.

## 6.3 Case Evidence from NATO

I complement this analysis with a case study of France's 1966 withdrawal from the NATO status of forces treaty to examine mechanisms through within-case process tracing (Goertz, 2016). Due to space constraints, the entire case study appears in appendix E; here, I discuss key takeaways.

French withdrawal was anticipated and well-known, factors that favor the byproduct and reputation hypotheses. French President Charles de Gaulle campaigned for re-election in 1958, promising to leave NATO, and worked to implement this agenda once in office (Ellison, 2006, 88; Schwartz, 2003, 94). NATO began preparing for exit in 1965, well before the

[18] I classify a withdrawal as from a "Large Treaty" if the treaty's membership is 20 or more, the median number of members among all instances of initial unilateral exit; otherwise it is a "Small Treaty." Appendix D provides additional analyses by membership size.

announcement of withdrawal in March 1966 (*FRUS* 1964-1968 v13, 230-231). The withdrawal was salient to NATO members and non-members alike. It garnered global media coverage and formed the context of de Gaulle's visits to Moscow and Phenom Phen in the summer and fall of 1966. Non-NATO states were aware of de Gaulle's actions and could incorporate them into their assessments of France's reliability.

Nevertheless, ratification trends show that NATO members' entry into multilateral agreements with France decreased relative to non-members beginning in 1966. This pattern is most consistent with experiential theory. However, unlike the aggregate trends presented in Figure 4, decreased cooperation persists until de Gaulle's death in 1970 and then rebounds to pre-withdrawal levels by 1972.[19] Despite this rebound, the historical record suggests that withdrawal set in motion mechanisms most consistent with experiential theory.

NATO officials perceived withdrawal as violating France's obligations to the alliance. US President Lyndon Johnson attempted to pre-empt retribution by ordering that "[b]ackbiting, recriminations, attempts to downgrade the importance of France as a nation, or attempts at reprisals should be avoided no matter what the temptation" (*FRUS* 1964-1968 v13, 112). Officials nonetheless reacted angrily. After de Gaulle told Secretary of State Dean Rusk that American troops must leave France, Rusk replied, "Does that include the dead Americans in military cemeteries as well" (Schoenbaum, 1988, 421)? Canadian prime minister Lester Pearson later told President Johnson he had asked de Gaulle the same question (*FRUS* 1964-1968 v13, 452). Despite President Johnson's orders, senior US and West German officials sought greater concessions in treaty negotiations to punish France for breaking its commitment to NATO, risking ongoing military cooperation on the frontlines of the Cold War (Schwartz, 2003, 107-108; *FRUS* 1964-1968 v13, 366).

Meanwhile, Western-aligned non-NATO states did not respond to France's exit with opprobrium; instead, they remained conspicuously silent. Despite extensive coverage, *The*

[19] Appendix F shows the effect of withdrawal varies little across cases with and without leadership turnover, suggesting the rebound in this case may be anomalous.

*Japan Times* did not report a single statement by Japanese officials on the crisis during March or April 1966.[20] The USSR responded with opportunism, not hesitancy about the reliability of France's commitments. The Soviet Ambassador to France, Valerian Zorin, declared the USSR would be happy to sign an alliance or non-aggression treaty with France (Ellison, 2007, 39). Soviet leader Leonid Brezhnev called for a summit on European security.

Withdrawal also created opportunities for NATO members to cooperate without France. The UK used the crisis as an opportunity to revive its bid to join the EEC, capitalizing on the estrangement of France from the Community's other members.[21] The US leveraged France's isolation from the EEC to push through the Kennedy Round of the GATT (*FRUS* 1964-1968 v13, 302). And with France sidelined and MLF negotiations abandoned, the US, USSR, and others were able to conclude the NPT, an agreement France would not join until 1992. The success of these initiatives depended on French acquiescence, which was achieved, in part, through isolation. Despite departing from the aggregate statistical findings, the case validates the relational mechanism central to the experiential theory of international cooperation.

# 7 Conclusion

These findings have important implications for our theoretical understanding of the relationship between reputation and international cooperation. Scholars continue to debate how far the reputational consequences of a state breaking its commitments extend and why states sometimes respond differently to the same information. The experiential theory of international cooperation offers mechanisms that address these issues. The relational

[20] Author analysis of all articles including the terms "France" and "NATO" published between March 1 and April 30, 1966. The search identified 46 articles, including 20 on the front page.

[21] Quoting Michael Palliser, the British Private Secretary for Foreign Affairs, Ellison refers to this as the "NATO-EEC complex" (2007, 61-66).

mechanism suggests that it matters *with whom* commitments are broken. The distributional mechanism suggests that withdrawal's effect on cooperation is increasing in the material costs of exit. The theory indicates clearly which states are likely to react harshly to withdrawal and how far these reactions are likely to extend.

I also make important empirical contributions. Previous research has focused primarily on the consequences of states breaking their commitments within issue areas, especially in the domains of security and economic cooperation. I advance this research by leveraging new cross-issue area treaty data to document how unilateral exits in one area can undermine cooperation in another. I show that cooperation does not generally deteriorate before exit, suggesting that, despite its lawfulness, withdrawal has a lasting effect on international cooperation. This effect increases in the material and diplomatic consequences of withdrawal and it persists even when the leadership of the exiting state changes.

These findings bring into focus the broader policy costs of unilateral exit. Even if a state can gain some short-term advantage by exiting a treaty, costs accrue over time. Policymakers should take this into account when deciding whether to exit or enter multilateral agreements. The manner in which these costs manifest is also important. States' abilities to get their way in the world often depends on marshaling international coalitions. Withdrawal has clear downsides in terms of states' ability to attract cooperative partners in the future. A record of unilateral withdrawal undermines the convening power of states.

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# Appendix

# A Data Collection

Data collection involved three steps. First, I collected the 7,964 unique URLs for all multilateral treaties concluded between 1873 and 2019 recorded in the UNTS. Second, I wrote a computer script to download information from each URL. The web pages follow a standard structure. At the top of each page is a table with treaty metadata. A second table lists all actions that various actors have taken toward the treaty. This table consists of four columns: Participant, Action, Date of Notification/Deposit, and Date of Effect. I saved each action and its corresponding treaty metadata into a data set. The data set contains 144,010 actions taken regarding the 7,964 multilateral treaties.

I then manually categorized the list of participants and actions. There are 679 unique participant names in the UNTS; 272 are territorial states or their subsidiaries (colonies, municipalities, etc.); the remainder is intergovernmental organizations. The data set includes 187 unique action types. I group actions into three categories. First, I categorize 83,857 actions as "ratifications"; these include instances states submitting instruments of Ratification, Accession, Acceptance, Succession, or otherwise having the treaty Enter Into Force.[22] Second, I categorize 3,116 actions as "withdrawals"; these include when actors submit instruments of Termination, Denunciation, Withdrawal, Suspension, or Cessation, for example. I categorize the remaining 57,037 actions as "ambiguous," either because the nature of the behavior they represent is unclear, such as the issuance of Declarations or Corrections, or because they fall short of representing actions of entering into or exiting from international treaties, such as instances of actors issuing Signatures or Reservations. I then use the subject terms provided by the UNTS to classify the 7,964 treaties into four issue areas: security, the environment, economics, and human rights. I present subject terms, their frequencies, and overlap below.

Not all treaties in the UNTS include information on participant action. As shown in Table 1, only 2.3% of original open multilateral treaties lack data on participant actions; however, 63.6% of amendments to original treaties and 62% of closed multilateral treaties are missing such data.[23] Two factors likely account for these differences. First, amendments

| | Open Orig. | Open Amend. | Closed Orig. | Total |
|---|---|---|---|---|
| Actions Present | 1682 | 1471 | 772 | 3925 |
| Actions Missing | 40 | 2576 | 1255 | 3871 |
| Total | 1722 | 4047 | 2027 | 7796 |

**Table 1:** Missingness of Actions by Treaty Type

to original multilateral treaties often apply to participants in the original treaty; therefore, participant actions toward amendments correspond with those of the original agreement. Second, missingness in closed multilateral treaties is often due to the fact that participants are identified in the treaty name, but ratification status is often unspecified.

With state actions and treaty types classified, I take the following steps to prepare these data for analysis. I first subset the data set to include only actions taken by states to enter

[22] Note that acceptance is not necessarily equivalent to ratification; however, states often accept amendments to treaties rather than taking more formal legal actions.

[23] 168 treaties are not categorized by type.

or exit multilateral treaties. I then restrict my analysis to post-1945, because this is when the UN Charter required states to submit treaty information to the UNTS and, thus, has the most comprehensive data. I further restrict the time series to pre-2010, because there is often a delay between when treaties are concluded and their deposit in the UNTS. These steps reduce the full data set to 75,685 actions (74,255 ratifications and 1,430 withdrawals) taken toward 2,579 treaties. 572 of these withdrawals (from unique 222 treaties) were then classified as unilateral exits using the classifications described below. There are 244 security, 454 environmental, 1,049 economic, and 396 human rights treaties in the data set; these categories are not mutually exclusive.

## A.1 Scope and Reliability of the UNTS

States' tendency to make their treaty commitments public has varied dramatically over the past two centuries. Before WWI, secret treaties were a common state practice, and international law did not require states to make treaties public (Donaldson, 2017, 578-579). Global attitudes toward the publication of treaties shifted sharply in the aftermath of WWI. Secret treaties made in advance of WWI, like the Treaty of London and the Treaty of Bucharest, were singled out as a cause of the conflict and condemned as inherently anti-democratic for limiting legislative oversight of diplomacy. So strong was the shift against secret diplomacy that President Woodrow Wilson made the topic the first of his famed Fourteen Points. Article 18 of the Covenant of the League of Nations established the first treaty registry, a practice continued by Article 102 of the UN Charter and later strengthened and affirmed through the Vienna Convention on the Law of Treaties.

Article 102 of the UN Charter is clear about norms of treaty publication:

1. Every treaty and every international agreement entered into by any Member of the United Nations after the present Charter comes into force shall as soon as possible be registered with the Secretariat and published by it.

2. No party to any such treaty or international agreement which has not been registered in accordance with the provisions of paragraph 1 of this Article may invoke that treaty or agreement before any organ of the United Nations.

Nonetheless, legal research suggests that state compliance with laws requiring the publication of treaties is imperfect. What constitutes a "treaty" or "international agreement" as specified by Article 102 is open to interpretation. This allows states to cast agreements between government agencies, such as "executive," "inter-agency" or "inter-departmental" agreements, thereby making diplomatic arrangements short of formal international treaties requiring registration (Donaldson, 2017, 609-610). Another issue concerns the scope of Article 102 enforcement. If states are prohibited only from invoking secret treaties in UN fora, then this implies that there might be no punishment for creating secret treaties outside the UN system.

A final issue stems from states' capacity and willingness to comply with international law. Data quality depends on states promptly submitting accurate information to the relevant registrar. However, as discussed in the article, if states choose to cheat their treaty commitments or fail to deposit instruments of withdrawal, then exit will not be observed in the UNTS. A review of the observed data suggests that states appear more likely to report compliant behavior. Initial unilateral exit violated the terms of the treaty in only 2 of the 222

cases: The UK's exit from the European Agreement on the Abolition of Visas for Refugees, which requires three months notice, but the UK only provided 4 days, and China's withdrawal from the Constitution of the International Rice Commission, which requires six months notice, but China provided none.[24] So few non-compliant exits suggests there is possibly a selection processes in which rule-abiding actions are more likely to enter into the UNTS than actions that violate the terms of an agreement. By not observing withdrawals that most flagrantly violate a state's treaty commitments, we are likely underestimating the impact of withdrawal on subsequent cooperation.

Despite these concerns, available data suggests that there has been more transparency in international law in the past century than before. One indicator of the prevalence of secret treaties is provided by the Alliance Treaty Obligations and Provisions (ATOP) data set (Leeds, 2002), which catalogues the content of 745 formal military alliances from 1815 through 2016.[25] These data, presented in Figure 9, reveal a sharp break in the practice of secret military alliances following the end of WWI and the creation of the League of Nations, a practice that has continued through the present day. This provides some limited evidence that the changes in international laws and norms following WWI decreased in the use of secret alliances as an instrument of foreign policy.

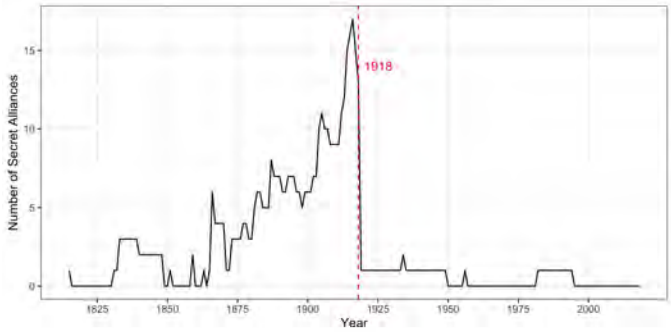



**Figure 9:** *Secret Military Alliances, 1815-2016 (ATOP data)*

How effective international laws and norms have been at rooting out the practice of secret treaties is unlikely to be resolved any time soon – secret treaties are secret, after all. Nevertheless, the dramatic break in the ATOP data set combined with concurrent shifts in international law provides suggestive evidence that state practices have changed and that the quality of data on states' treaty commitments improved substantially following WWI. The focus of this study on multilateral treaties is also noteworthy. As the number of state parties to a treaty increases, so too does the likelihood that the treaty will be made public. It is more difficult for a large multilateral treaty to remain secret than one consisting of two states.

[24] UK withdrawal occurred in February 2003, immediately prior to the invasion of Iraq. For the UK case, see article 12 of the agreement, available at `https://treaties.un.org/Pages/showDetails.aspx?objid=0800000280139111&clang=_en`; for the China case, see article 7 of the agreement, available at `https://treaties.un.org/Pages/showDetails.aspx?objid=0800000280153e78&clang=_en`.

[25] Version 4.0 of the ATOP data set is available at: `http://www.atopdata.org/`. A similar figure is presented in Bas & Schub (2016).

## A.2 Classification of Unilateral Exits

Not all withdrawals are alike. Some are politically contentious. Others are the result of coordinated action by states to terminate outdated agreements. To identify politically contentious withdrawals, I focus my analysis on unilateral exits, which legal scholarship differentiates from more cooperative withdrawals (Helfer, 2005, 2019). I define *unilateral exit* as the act of a state unilaterally withdrawing from a multilateral agreement. This definition consists of three parts. Withdrawal involves states issuing to the relevant treaty depositary a notification of withdrawal or denunciation or other action that has the effect of terminating a state's legal obligations with respect to a given treaty. Multilateral refers to treaties that coordinate policies of groups of three or more states (Keohane, 1990, 731). And unilateral means that exit is not coordinated with other states. This definition brings into focus a key feature of unilateral exit: while the withdrawing state frees itself from its treaty obligations, other treaty members remain bound by them.

Unilateral exit stands in contrast with cooperative exit. Cooperative exit does not result in an asymmetric change in legal obligations. Cooperative exit can take several forms. A common case is when states agree to terminate a treaty, such as the collective dissolution of the Warsaw Pact in 1991. Cooperative exit also occurs when states denounce treaties that have been superseded by new agreements. This occurred when GATT was supplanted by the WTO, resulting in states simultaneously withdrawing from GATT and entering the WTO. This process is sometimes implemented by *ipso jure* denunciation, such as in International Labor Organization Convention 138, which regulates the minimum age for employment, the ratification of which involves the immediate withdrawal of nine other agreements.[26] Another type of cooperative exit is supranational substitution. Supranational substitution occurs when a state joins an international organization with legal standing and transfers its treaty obligations to that body. This occurred when Greece joined the European Economic Community (EEC) in 1981 and simultaneously withdrew from several multilateral economic agreements to which the EEC belonged. Finally, cooperative exit can follow from changes in sovereignty, such as when East Germany withdrew from the Warsaw Pact following German reunification in 1990.

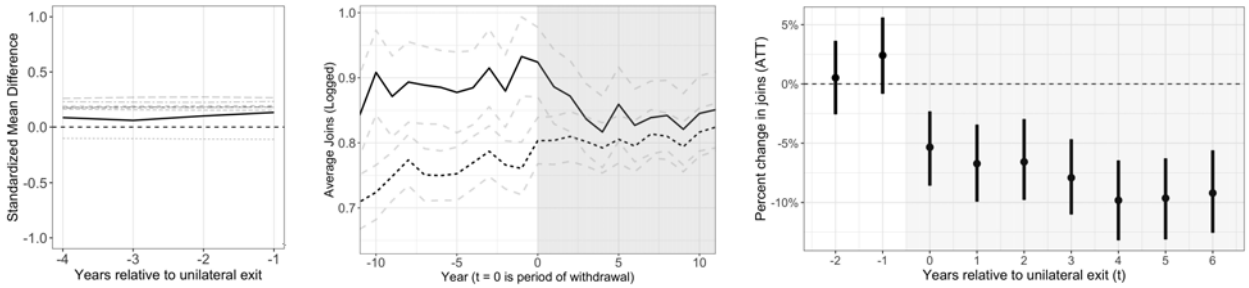
Following these definitions, I classified the 1,430 withdrawals in the UNTS as initial unilateral exits by taking the following steps. First, I created a list of all 349 multilateral treaties that experience at least one withdrawal. I then assessed whether the withdrawal(s) from each of these treaties were coordinated, as evidenced by the fact that the treaty was collectively "Terminated" or that states withdrew in lockstep in a short period of time. If it appeared as though one or more states withdrew from this treaty while other parties remain bound by it, then I confirmed this with secondary sources such as an organizational website, news reports, or other evidence that the treaty is still in force. Finally, the first state to withdrawal from each treaty was coded as having engaged in an initial unilateral withdrawal. If more than one state withdrew from the same agreement in the same year, then these states were all coded as engaging in initial unilateral withdrawal.

[26] *United Nations Treaty Series*, Vol. 1015, page 304-306.

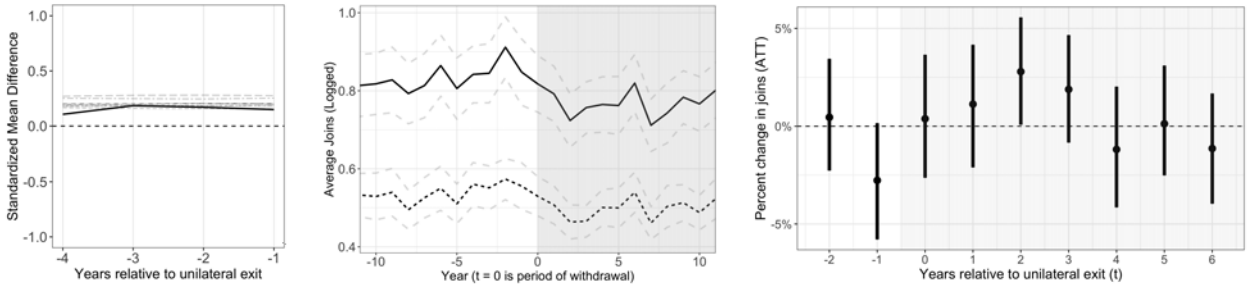
# B Main Results: Supplementary Analyses

For each analysis in the article, I present three analyses in the appendix: balance in covariates and outcomes in the pre-withdrawal period in the matched set; descriptive statistics illustrating parallel trends and shifts in ratification behavior in the full set of states; and the corresponding difference-in-differences analyses. Figure 10 presents these analyses for the main results; Figures 23, 26, and 27 provide these for the subgroup analyses.

Figure 10 provides strong evidence of parallel trends in the pre-withdrawal period: the difference in joins between treaty members and non-members is never greater than 0.2 standard deviations and there are no significant decreases or discontinuities in joins among treaty members prior to exit. The parallel trends in the pre-withdrawal period in the descriptive analyses supports this inference. Estimates provided for reference.




*(a) Main Analysis*




*(b) Analysis of Joins by Withdrawing State*

**Figure 10:** *Full Main Analyses.* Figure presents covariate balance in the pre-withdrawal period between treaty members and matched non-members (left), descriptive statistics of joins by all treaty members and non-members before and after exit (middle), and difference-in-differences estimates (right) for both the main analysis (top) and the analysis of withdrawing state behavior (bottom).

## B.1 Matching and Covariate Balance

Recall that the covariates used to match treaty members and non-members measure (a) the degree of connection between ratifying states and the withdrawing state, which are referred to subsequently in the appendix as "Connection Covariates," and (b) ratifying states' characteristics, which are referred to here as "State Covariates."

The difference-in-differences estimators used to assess the effect of unilateral exit includes a matching step to improve covariate balance and the credibility of the parallel-trends assumption necessary for a causal interpretation of the estimated coefficients. In the main analyses, I match treaty members with up to 5 non-members using Mahalanobis distance matching on treatment, outcome, and covariate histories in the four years prior to withdrawal.

A key component of my research design is covariate balance and parallel trends in outcomes. Figure 11 illustrates trends in outcomes and covariate balance across four different refinement methods: (1) no refinement, (2) Mahalanobis distance matching with up to 5 treaty non-members, (3) Mahalanobis distance matching with up to 10 treaty non-members, and (d) propensity score weighting. In all plots, trends in the outcome variable are illustrated with a black line and trends in covariates are illustrated with grey dashed lines.

In all cases, trends in outcomes are constant in the pre-treatment period, as would be expected from the graphical analyses presented in the main text and appendix B.4. Mahalanobis distance matching with up to 5 treaty non-members is best in terms of overall balance in trends and covariates. At no point does any variable have a standardized mean difference between treaty members and non-members greater than 0.28 in the years leading up to withdrawal. Propensity score weighting also performs well; however, it does more poorly in balancing dyadic and total trade, an important shortcoming given the prevalence of economic agreements as shown in section C. For this reason, my main analyses use Mahalanobis distance matching with up to 5 non-members.

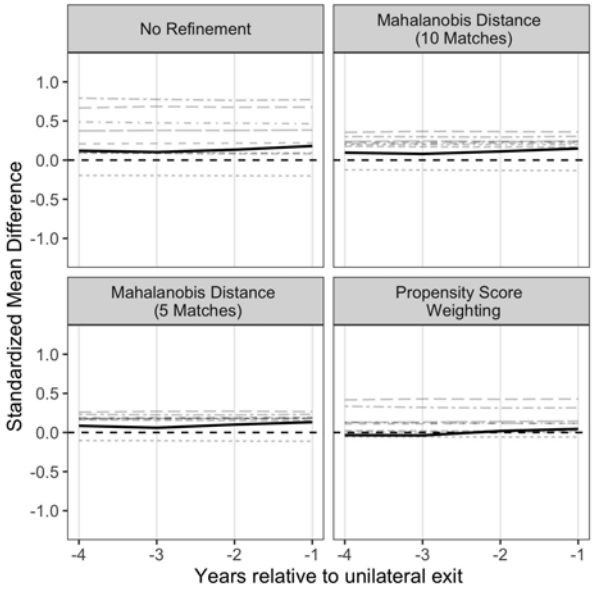



**Figure 11:** *Covariate Balance by Refinement.* Each graph plots the standardized mean difference during the four years prior to initial unilateral exit for different refinement methods.

## B.2 Different Specifications and Refinements

Here I replicate my main results using different approaches to refinement and different model specifications. Figure 12 presents analyses in which I replicate my main results using two

different types of refinement – propensity score weighting and Mahalanobis distance matching with up to 5 non-members – across three different model specifications. Model 1 is a base-specification in which I exclude all covariates and only match on trends in outcomes during the pre-treatment period. Model 2 adds the two Connection Covariates to the refinement step. Model 3 adds to this the State Covariates (Model 3 is the full model reported in the main text). All models in Figure 12 provide evidence that unilateral exit corresponds

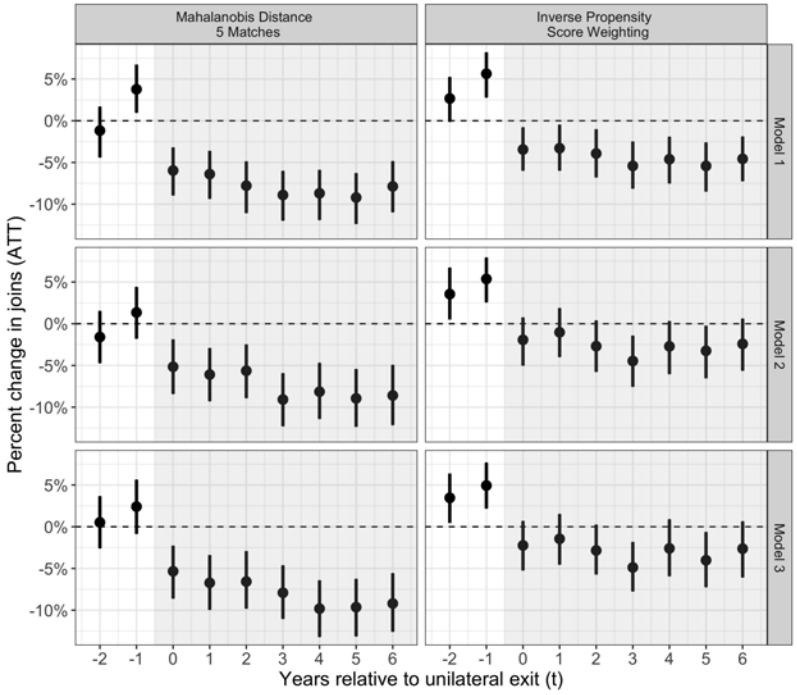



**Figure 12:** *Difference-in-Differences Estimates Varying Model Specification.* Plots present replication of main results using three different model specifications and two different refinement methods; description otherwise the same as Figure 5.

with a decrease in joins by treaty members. Furthermore, none of the placebo analyses (presented, as before, in the unshaded region) are negative and statistically significant. In fact, several placebo estimates are *positive*, suggesting that cooperation among treaty members was increasing prior to withdrawal. If this is true, then the estimated effect of unilateral exit in these models is possibly understated. Figure 13 presents replications of the full model (Model 3) using different refinement methods. Again, all analyses provide evidence consistent with the inference that unilateral exit reduces cooperation by treaty members.

## B.3 Variation in Sample of Unilateral Exits

My focus on the initial unilateral exit from each treaty is a research design choice aimed at increasing the internal validity of my study. Exits are contagious. When one state exits a treaty, other states are likely to follow suit. I argue that the initial exit from a treaty informs other treaty members about the cohesion of an agreement that could bias the estimated effect of subsequent withdrawals. However, this choice comes at the cost of external validity. Only 222 of the 572 unilateral exits are initial unilateral exits.

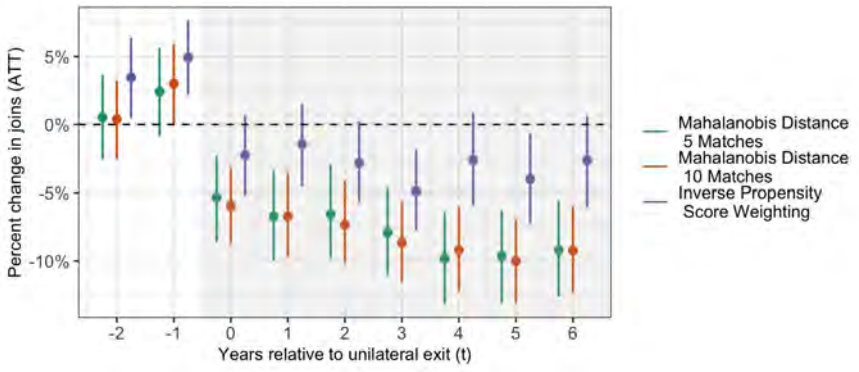



**Figure 13:** *Difference-in-Differences Estimates Varying Refinement Method.* Replication of Figure 5 using different refinement methods; description otherwise the same as Figure 5.

In Figure 14 I replicate my analysis using three additional samples: (1) all unilateral exits in the UNTS; (2) only the first unilateral exit by each state; and (3) the first time each state engages in the initial unilateral exit from a treaty. As expected, there is consistent evidence that unilateral exit undermines cooperation by treaty members. This effect is more attenuated in the full sample and more accentuated in analyses of initial exits by individual states or from individual treaties or both. Note that the variation in confidence intervals reflects changes in the sample sizes used in each analysis.

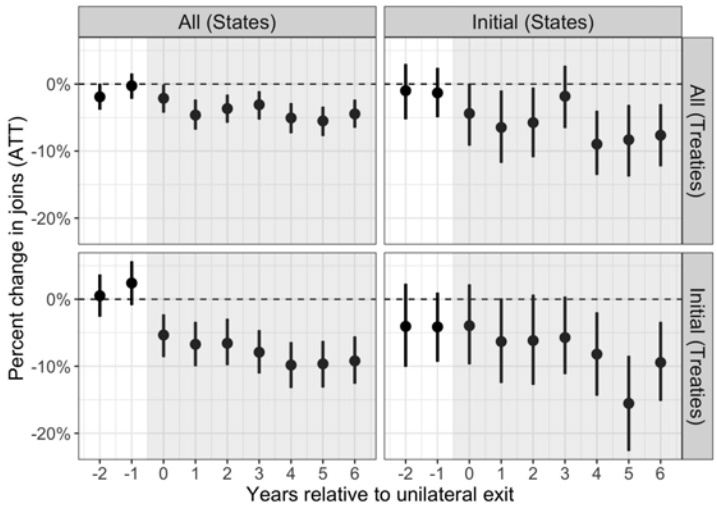



**Figure 14:** *Replication of Main Analysis with Four Different Samples.* Four samples include: (a) all exits by all states, (b) initial exits for all states, (c) initial exits for all treaties, and (d) only the first initial exit by each state; description otherwise the same as Figure 5.

## B.4 Supplementary Graphical Analyses

In the main analyses, I use the log of joins as my outcome variable to guard against time trends or outliers driving my statistical results. Here I present trends in outcomes in two

additional ways. In Figure 15, I present trends in the raw count of joins. In Figure 16, I plot the average outcome for logged joins for treaty members and non-members in each of the 222 unilateral exits. All cases show a shift in joins among treaty members and no corresponding shift among non-treaty members.

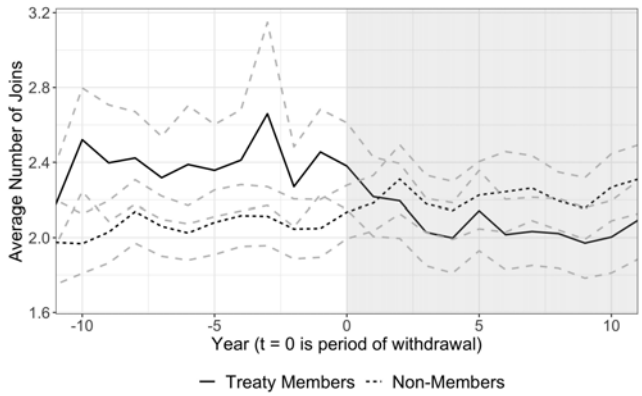



**Figure 15:** *Joins (Count) Before and After Initial Unilateral Exit, 1945-2010.* Lines are averages of the count of joins in the ten years before and after the period of withdrawal for treaty members and non-members; description is otherwise the same as Figure 4.

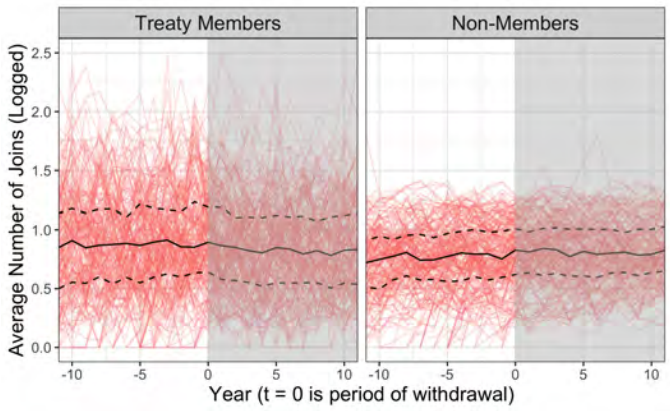



**Figure 16:** *Distribution of Trends in Outcomes for All Initial Unilateral Exits, 1945-2010.* Red lines plot the average logged joins for each of the 222 unilateral exits in the ten years before and after withdrawal. Left: outcomes for treaty members. Right: outcomes for treaty non-members. Solid black line is the median; dashed black lines are the 25th and 75th quantiles.

## B.5 Two-Way Fixed Effects Analyses

I replicate my main analysis with two-way fixed effects regression models:

$$Y_{it} = \alpha_i + \gamma_t + \delta D_{it} + \beta X_{it} + \varepsilon_{it}$$

where $Y_{it}$ is logged joins by state $i$ with the withdrawing state in period relative to exit $t$; $\alpha_i$ and $\gamma_t$ are directed-dyad and period fixed effects; $X_{i,t}$ is the same set of "Connection" and

"State" covariates used in the main analyses;[27] and $D_{i,t}$ is an indicator variable that takes 1 for treaty members in the post-withdrawal period and is 0 otherwise. Confidence intervals are estimated using treaty and withdrawing state two-way cluster robust standard errors. I also include calendar year fixed effects to account for temporal trends in the data, which are accounted for in the difference-in-differences analyses by refinement.

Table 2 presents the results of the two-way fixed effects analyses, revealing a strong negative association between unilateral exit and subsequent joins by treaty members. This strong negative association persists across a simple two-way fixed effects model, Model (1); a similar model that incorporates covariates measuring the extent of states' connection with the withdrawing state, Model (2); a model that adds to this the battery of covariates concerning state-level attributes, Model (3); and models in which the window used for the pre- and post-periods is extended to 15 years, Model (4), or reduced to five years, Model (5). These analyses provide strong, consistent evidence in support of experiential theory.

**Table 2:** Two-way Fixed Effects Estimates, 1945-2010

| | *Dependent variable:* | | | | |
|---|---|---|---|---|---|
| | Joins (Logged) | | | | |
| | (1) | (2) | (3) | (4) | (5) |
| Members × Post-Exit | −0.034*** | −0.027*** | −0.024*** | −0.030*** | −0.020** |
| | (0.010) | (0.008) | (0.007) | (0.007) | (0.008) |
| Study Window | 10 Years | 10 Years | 10 Years | 15 Years | 5 Years |
| Connection Covariates | – | ✓ | ✓ | ✓ | ✓ |
| State Covariates | – | – | ✓ | ✓ | ✓ |
| Observations | 635,408 | 635,408 | 537,982 | 763,331 | 292,455 |
| $R^2$ | 0.241 | 0.246 | 0.268 | 0.260 | 0.288 |

*Notes:* All models are two-way fixed effect regressions with directed-dyad, period, and calendar year fixed effects. Withdrawing state-treaty two-way cluster robust standard errors in parentheses. *p<0.1; **p<0.05; ***p<0.01.

Figure 17 presents the results of placebo analyses in which I move artificially the date of withdrawal one, two, three, four, and five years before the actual date of withdrawal and apply two-way fixed effect Model (3) from Table 2. All estimates are statistically insignificant, suggesting there is not evidence of anticipation. For reference, I include the estimates from models (3), (4), and (5) of Table 2 in the shaded region.

## B.6 Non-Member Reactions to Withdrawal

Table 3 presents regressions illustrating that there is not a statistically significant change in joins by treaty non-members after exit. To conduct this analysis, I omit all treaty members from the analysis and restrict the sample to the four years preceding withdrawal – that is, the period used for matching in the difference-in-differences analyses – and either one, two, three, four, five, six, or ten years post-withdrawal. I then assess the association between joins and `Post-Exit`, an indicator variable that takes 1 in all years except those that precede

[27] Except for dyadic trade, which is missing in 63.6% of observations and could distort the sample via listwise deletion; in the difference-in-differences analyses missing values are matched with one another.

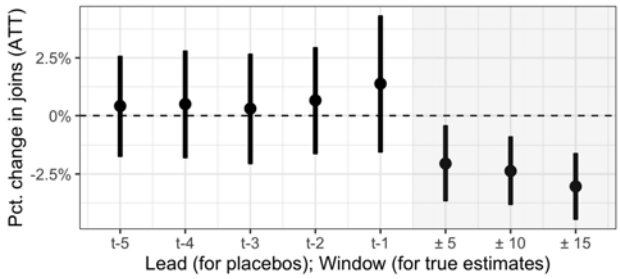



**Figure 17:** *Two-Way Fixed Effects Placebo Analysis.* In all analyses, treated observations are truncated at the beginning of the real period of withdrawal to avoid including data after the treatment is applied. Bars are withdrawing state-treaty two-way cluster robust 95% confidence intervals.

withdrawal. Like the fully specified models in Table 2, all models include directed-dyad and calendar year fixed effects as well as the Connection and State covariates; however, period fixed effects are omitted due to collinearity. These analyses should be viewed with caution: unlike the main difference-in-differences analyses, this analysis has no counterfactual group and should not be interpreted causally. The analysis shows that any changes in the ratification behavior of non-members following exit are not statistically significant and are, therefore, unlikely to account for the estimated effect on treaty members' behavior.

**Table 3:** Analysis of Joins by Non-Members Before and After Unilateral Exit, 1945-2010

| | *Dependent variable:* | | | | | | |
|---|---|---|---|---|---|---|---|
| | Joins (Logged) | | | | | | |
| | (1) | (2) | (3) | (4) | (5) | (6) | (7) |
| Post-Exit | 0.012 | 0.013 | 0.011 | 0.010 | 0.010 | 0.008 | 0.007 |
| | (0.007) | (0.008) | (0.008) | (0.008) | (0.008) | (0.008) | (0.007) |
| Post-Exit Period | 1 Year | 2 Years | 3 Years | 4 Years | 5 Years | 6 Years | 10 Years |
| Connection Covariates | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| State Covariates | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Observations | 130,009 | 151,905 | 174,035 | 195,744 | 217,252 | 238,889 | 324,156 |
| $R^2$ | 0.318 | 0.311 | 0.303 | 0.297 | 0.291 | 0.288 | 0.277 |

*Notes:* All models are two-way fixed effect regressions with directed-dyad and calendar year fixed effects. Withdrawing state-treaty two-way cluster robust standard errors in parentheses. $^{*}$p<0.1; $^{**}$p<0.05; $^{***}$p<0.01.

## B.7 Variation by Time Period and Withdrawing State

How does the relationship between unilateral exit and subsequent cooperation vary over time? Figure 18 presents difference-in-differences analyses that divide withdrawals into four periods: those occurring during the early Cold War period (1945-1961), the period of relaxed US-Soviet tensions following the Cuban missile crisis through détente and ending with Soviet invasion of Afghanistan (1962-1979), the late Cold War (1980-1991), and the post-Cold War period. These analyses show large confidence intervals with substantial negative effects before 1962, likely because there were only 25 unilateral exits during this period. Estimates during

the next two periods are more attenuated. During détente and the late Cold War, unilateral exit is associated with a weaker, though still significant, decrease in joins. The effect of exit is most pronounced and consistent after the dissolution of the Soviet Union. Figure 19 interrogates this heterogeneity further by applying model (3) from Table 2 to all exits occurring within ten years of each year in the 1955 to 2005 period. These analyses reveal estimates indistinguishable from zero prior 1980 and consistent negative effects thereafter.

The divergence in the effects before 1961 in Figures 18 and 19 are possibly due to the lack of matching in the two-way fixed-effects models, which increases variance in joins among the non-members, and the more limited number of withdrawals and independent states in the early part of the time series. There are no clear changes in the rate of withdrawal or the geographic distribution of states exiting treaties across time periods. This suggests that the unique great power dynamics of this period associates with changing dynamics of international cooperation– a possible avenue for subsequent research.

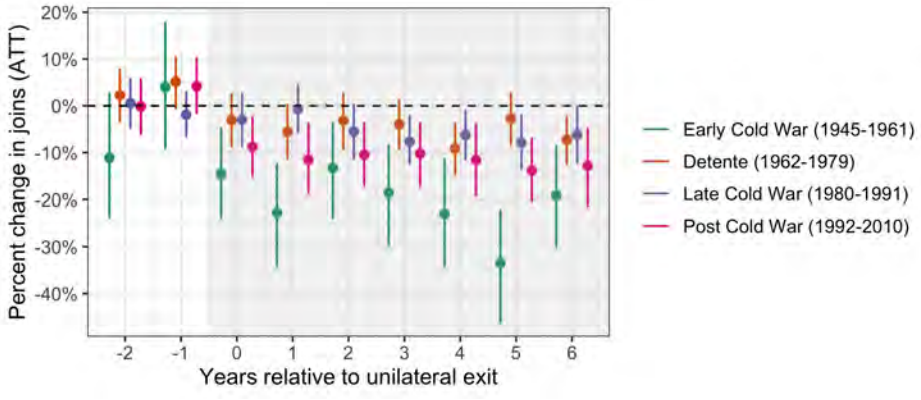



**Figure 18:** *Variation in Results Over Time, Difference-in-Differences Estimates.* Plots are difference-in-differences estimates computed using the same models as Figure 5, but for subsets of exits occurring within a given time period. Description is otherwise the same as Figure 5.

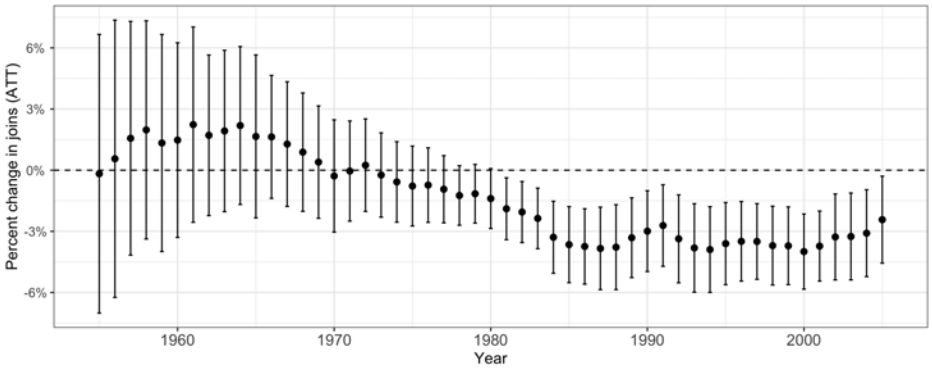



**Figure 19:** *Variation in Results Over Time, Two-Way Fixed Effects Estimates.* Plot presents two-way fixed effects estimates computed using model (3) from Table 2 for withdrawals occurring in the 10 years before and after each year in the 1955 to 2005 time period. Black bars are 95% two-way cluster robust confidence intervals clustered by withdrawing state and treaty.

Finally, Figure 20 shows that holding out individual states does not change the association between unilateral exits and subsequent cooperation. Figure 20 illustrates this by showing estimates of Model (3) from Table 2 when excluding each withdrawing state from the analysis. Across the board, estimates do not change meaningfully. No single state is driving the observed relationship between unilateral exit and subsequent cooperation.

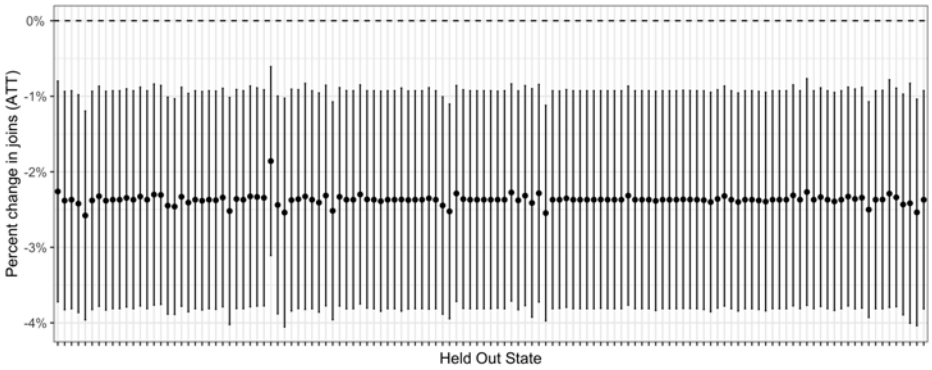



**Figure 20:** *Excluding States from Analysis, Two-Way Fixed Effects Estimates.* Plots present two-way fixed effects estimates computed using Model (3) from Table 2 when excluding withdrawals by specific states. 95% two-way cluster robust confidence intervals clustered by withdrawing state and treaty are presented as black bars.

## B.8 Floor Effects

A key insight of the preceding analysis is that unilateral exit causes treaty members to cooperate less with the withdrawing state, but has no discernible effect on non-member behavior. One threat to this inference is a floor effect: that the lack of response among non-members is simply because they are already not cooperating with the exiting state and cannot withhold cooperation any further.

Two features of the research design and findings suggest that floor effects are not driving the results. First, the descriptive analyses provide evidence against floor effects. As shown in Figure 15, for example, the average non-member is joins the exiting state in about 2 treaties in the four years before exit, suggesting there is room for non-members to scale back cooperation. Similar patterns exist in the descriptive analyses presented below in Figures 23, 26, and 27. In the case of withdrawals by Major Powers, presented in Figure 26, non-members appear to decrease cooperation after exit. This evidence suggests floor effects are not limiting non-members' response to withdrawal.

Second, the matching step in the estimation strategy explicitly guards against floor effects by pairing members to non-members with similar level of cooperation toward the exiting state in the four years before withdrawal. As shown by the black lines in Figure 11, treaty members and non-members have similar outcome histories prior to treatment.

In Figure 21, I test for floor effects by excluding from the analysis all possibly "floored" observations – those in which ratifying states join few treaties with the withdrawing state in the pre-withdrawal period. Specifically, I exclude all states who join fewer than four treaties with the withdrawing state – that is, less the one per year – in each of the four years

before exit. Because these states ratify so few agreements with the withdrawing state to begin with, there is little room for them to scale back cooperation after exit. If these results are substantively different from those presented in the main analysis (Figure 5), this would provide evidence of floor effects. However, as shown in Figure 21, results are substantively similar.

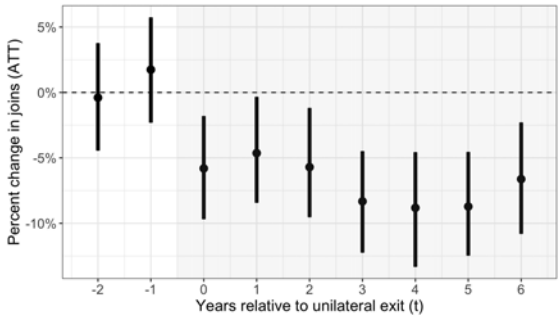



**Figure 21:** *Robustness to Floor Effects: Excluding Non-Joining States.* Difference-in-differences estimates of the effect of unilateral exit after removing all states that join fewer than four agreements with the withdrawing state in the four years before withdrawal.

# C Distributional Consequences: Variation by Issue Area

This section contains supporting material for the issue areas analyses. I first detail the classification of treaties by issue area and then present supplementary analyses.

## C.1 Issue Area Classification

Here I lists the subject tags from the UNTS used to classify treaties into the issue areas of security, human rights, economics, and the environment. The lists provide the subject term in quotations followed by the number of state actions that are tagged with that term in parentheses. Treaties often have multiple subject tags, meaning that treaties can be classified in more than one issue area; this overlap is illustrated below.

### C.1.1 Security

"Arms" (3503); "Disarmament" (3367); "Nuclear matters" (3360); "Terrorism" (2870); "War" (2428); "Narcotics" (2366); "Military matters" (1835); "Geneva Conventions (with Protocols)" (1754); "Palermo Convention" (911); "Security" (570); "Protocols to the Geneva Conventions" (527); "Peace" (517); "Partial Nuclear-Test-Ban Treaty (PTBT)" (396); "Test Ban Treaty" (396); "International Atomic Energy Agency (IAEA)" (335); "NPT (Non-Proliferation Treaty)" (329); "IAEA" (325); "NATO" (294); "North Atlantic Treaty Organization (NATO)" (294); "Mines (military)" (239); "BW Convention (bacteriological weapons)" (212); "Outer Space Treaty" (206); "ENMOD Convention (disarmament)" (145); "Police" (128); "Sea-bed Treaty (Nuclear weapons)" (116); "Geneva Conventions" (105); "Locarno Agreement" (92); "Missions; see also United Nations Missions-Peacekeeping" (90); "Tlatelolco Treaty" (80); "Mercenaries" (75); "Neutrality" (54); "European Atomic Energy Community (EURATOM)" (36); "Bogota Pact" (32); "Friendship" (30); "Moon Treaty"

(29); "Rarotonga Treaty (South Pacific Nuclear Free Zone)" (29); "SEATO (Southeast Asia Treaty Organization)" (28); "Rio Treaty (Inter-American Treaty )" (25); "Atomic energy (peaceful uses)" (18); "Baghdad Pact" (12); "Quadripartite Agreement" (8); "Protocol of Port of Spain" (4); "Non-proliferation of nuclear weapons" (3); "United Nations Missions-Peacekeeping" (3).

### C.1.2 Economics

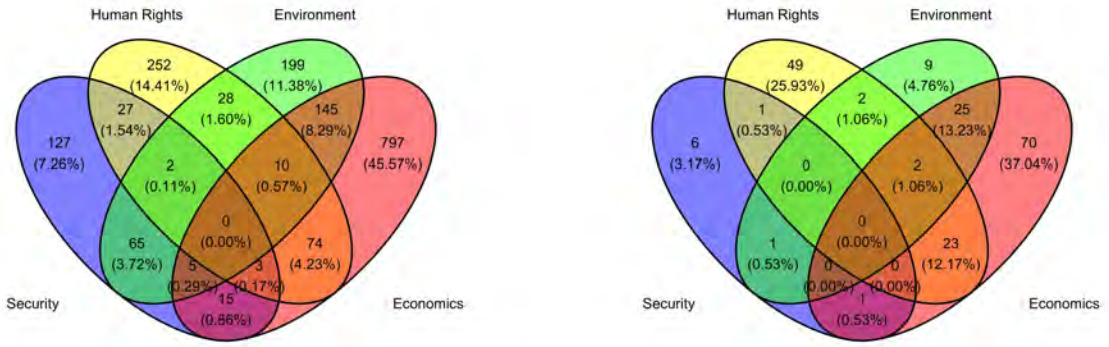
"Trade" (21205); "Commodities" (8630); "General Agreement on Tariffs and Trade (GATT)" (7578); "Maritime matters" (5747); "Agricultural commodities" (5208); "Finance" (3739); "Agriculture" (3602); "Customs" (3539); "Ships and shipping" (2887); "Industry" (2131); "Trade law" (1656); "Fishing and fisheries" (1442); "Copyright" (1410); "Economic matters" (1408); "World Trade Organization" (1244); "Marrakesh Agreement" (1195); "Patents" (1001); "Tourism" (883); "Investments" (803); "Trade-marks and appellations of origin" (692); "Taxation" (574); "Insurance" (552); "United Nations Industrial Development Organization (UNIDO)" (480); "Publications" (460); "Monetary matters" (430); "Marketing" (277); "Basel Convention" (274); "International Fund for Agricultural Development (IFAD)" (274); "Bretton Woods Agreements (IMF)" (260); "Lomé Convention (ACP-EEC Convention)" (239); "Construction" (217); "Mining" (199); "Loans" (196); "TIR Convention (Customs convention) Customs" (187); "Benelux Economic Union" (157); "International Development Association (IDA)" (157); "International Monetary Fund (IMF)" (141); "Rome Convention" (141); "Berne Convention" (135); "International Bank for Reconstruction and Development (IBRD)" (131); "Credits" (109); "Madrid Agreement" (109); "International Finance Corporation (IFC)" (106); "GATT (General Agreement on Tariffs and Trade)" (83); "Budapest Treaty" (82); "Nice Agreement (int. classification of goods and services)" (76); "Rome Treaty (EEC)" (76); "Hamburg Convention" (63); "Corporations" (59); "Council for Mutual Economic Assistance (CMEA)" (57); "Georgetown Agreement (ACP)" (44); "Dairy farming" (41); "Strasbourg Agreement (int. patent classification)" (40); "Nairobi Treaty" (36); "Pensions" (31); "Cartagena Agreement" (25); "Latin American Economic System (SELA/LAES)" (25); "Panama Convention (SELA)" (25); "Lisbon Agreement" (18); "Brusselles Convention (civil liability:carriage of nuclear material by sea)" (15); "Lend-lease agreements" (15); "Nordic Patent Institute" (15); "Wines-Spirits" (15); "Desalination" (14); "EEC Treaty" (12); "Lisbon Agreement (appellations of origin:protection)" (11); "Protocol of San Jose" (9); "Rubber Agreement (1976, Malaysia)" (5); "Nordic Convention" (4); "Belgo-Luxembourg Economic Union" (3); "Havana Charter" (2); "IFAD" (1).

### C.1.3 Environment

"Environment" (16196); "Sea" (5582); "Pollution" (3778); "Energy" (3259); "Watercourses-Water resources" (1709); "Wildlife (protection)" (1518); "UNCLOS (Law of the Sea)" (1516); "Plants" (1495); "Animals" (1329); "Outer space" (1268); "Fuels" (959); "Montreal Protocol" (896); "Biology" (596); "Habitat" (587); "SOLAS (Safety of Life at Sea)" (538); "CITES (endangered species)" (499); "Natural resources" (383); "Forestry" (374); "Drought" (366); "Metals" (275); "Ozone Convention (Vienna Convention)" (243); "Outer Space Treaty" (206); "International Maritime Satellite Organization (INMARSAT)" (202); "Mining" (199); "Meteorology" (194); "Ramsar Convention (Wetlands Convention)" (188); "Gas" (187); "World Meteorological Organization (WMO)" (163); "CLC (civil liability for oil pollution damage)" (142); "Whaling" (141); "High Seas Convention Environment" (138); "Continental Shelf Convention" (119); "Insects" (90); "Espoo Convention (environmental impact assessment)" (87); "High Seas Fishing Convention (living resources:conservation)" (78); "MARPOL (maritime pollution)" (56); "Athens Protocol" (55); "CMS (migratory species)" (47); "Bonn Convention (conservation of migratory species)" (46); "Antarctic Marine Living Resources Convention" (44); "Canberra Convention (CCAMLR, Antarctic Marine Living Resources Convention)" (44); "European Atomic Energy Community (EURATOM)" (36); "Phyto-Sanitary Convention (Africa, Sahara)" (36); "Whaling Convention" (36); "Mineral resources" (33); "Barcelona Convention" (32); "Cartagena Convention (Caribbean region:protection) Caribbean" (30); "Moon Treaty" (29); "World Charter for Nature" (19); "Bamako Convention" (17); "Noumea Convention (South Pacific Region SPREC)" (7); "Lima Convention" (5).

### C.1.4 Human Rights

"Human rights" (15611); "Labour" (13586); "Children-Minors-Youth" (6575); "Geneva Conventions (with Protocols)" (1754); "ICCPR (civil and political rights)" (1191); "Refugees" (1035); "International Labour Organisation (ILO)" (840); "ICESC (Covenant on Economic, Social and Cultural Rights)" (435); "Rome Statute" (350); "Geneva Conventions" (105); "African Charter on Human Rights" (39); "Pact of San Jose, Cosat Rica (human rights)" (35); "Protocol of Buenos Aires" (31); "Banjul Charter on Human Rights" (25).

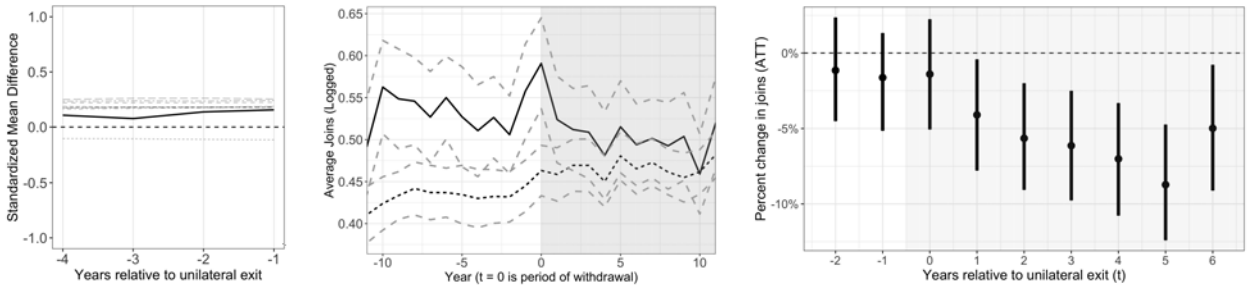



**Treaties** **Initial Unilateral Exits**

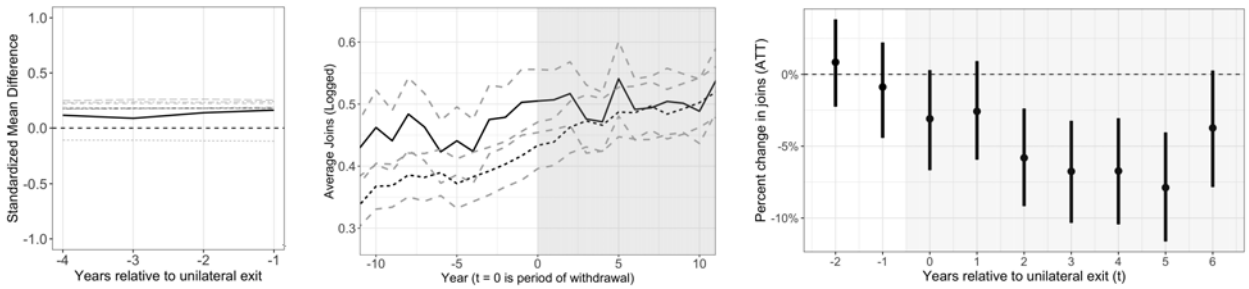
**Figure 22:** *Overlap of Treaties (left) and Initial Unilateral Exits (right) by Issue Area.* Note that 830 of the 2,579 treaties (32.18%) in the UNTS do not fall within one of these four issue areas, but that all cases of initial unilateral exit do fall into these issue areas.

## C.2 Issue Area Analyses

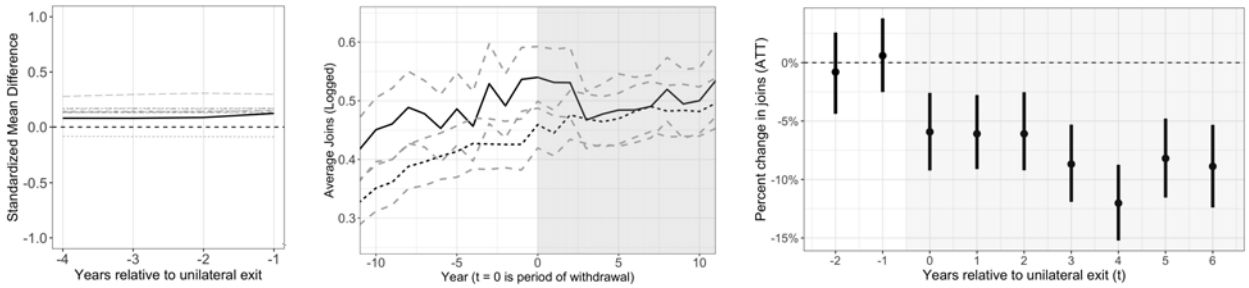
Figure 23 presents the full set of issue area analyses. As in Figure 10, I present covariate balance between treaty members and matched non-members (left), descriptive analyses (middle), and corresponding difference-in-differences estimates (right). Covariate plots show that treaty members and non-members are well-balanced prior to withdrawal and that joins follow stable trajectories, providing evidence in favor of the parallel trends assumption. The descriptive analysis confirm this, showing that trends in joins are broadly consistent prior to exit and that only treaty members reduce joins with the withdrawing state after exit.



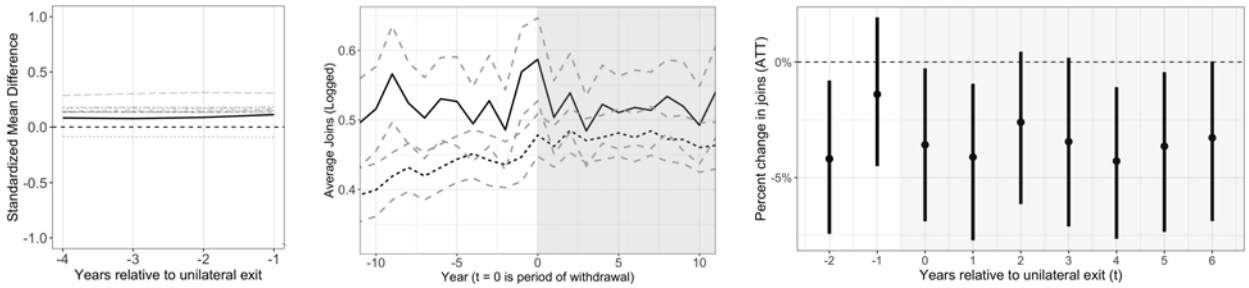

*(a) Within-Direct Cost*




*(b) Across-Direct Cost*




*(c) Within-Diffuse Cost*




*(d) Across-Diffuse Cost*

**Figure 23:** *Full Cost Analyses.* Figure presents covariate balance in the pre-withdrawal period between treaty members and matched non-members (left), descriptive statistics of joins by all treaty members and non-members before and after exit (middle), and difference-in-differences estimates (right) for each of the four issue area analyses presented in the article.

## C.3 Analysis of Joins by Treaty Non-Members by Issue Area

Table 4 confirms that joins by treaty non-members does not decrease after exit. These tables replicate Models (2), (4), (6), and (7) of Table 3 in Section B.6 by issue area. Only in the Across-Direct Cost analysis is there evidence that joins by non-members changes after exit; however, this finding only occurs in analyses that include observations outside the six-year post-withdrawal study period used in the main analyses. These analyses confirm that cooperation by non-members is comparable before and after exit in the analyses where the difference-in-differences models suggest there is a relationship between exit and cooperation among treaty members. This provides evidence that the observed relationship is driven by changes in cooperation by treaty members and not by changes in the behavior of non-members.

**Table 4:** Analysis of Joins by Non-Members Before and After Unilateral Exit by Issue Area, 1945-2010

| | *Withdrawals from Direct Cost Treaties* | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | Within Issue Area | | | | Across Issue Areas | | | |
| | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) |
| Post-Exit | 0.010 | 0.008 | 0.008 | 0.009 | −0.003 | −0.004 | −0.007 | −0.011 |
| | (0.008) | (0.009) | (0.009) | (0.008) | (0.007) | (0.007) | (0.007) | (0.008) |
| Post-Exit Period | 2 Years | 4 Years | 6 Years | 10 Years | 2 Years | 4 Years | 6 Years | 10 Years |
| Connection Covariates | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| State Covariates | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Observations | 89,901 | 116,319 | 142,912 | 196,115 | 89,901 | 116,319 | 142,912 | 196,115 |
| $R^2$ | 0.257 | 0.236 | 0.225 | 0.208 | 0.286 | 0.272 | 0.267 | 0.253 |
| | *Withdrawals from Diffuse Cost Treaties* | | | | | | | |
| | Within Issue Area | | | | Across Issue Areas | | | |
| | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) |
| Post-Exit | −0.010 | −0.009 | −0.007 | −0.004 | 0.002 | −0.001 | 0.003 | 0.007 |
| | (0.007) | (0.006) | (0.006) | (0.006) | (0.008) | (0.008) | (0.009) | (0.009) |
| Post-Exit Period | 2 Years | 4 Years | 6 Years | 10 Years | 2 Years | 4 Years | 6 Years | 10 Years |
| Connection Covariates | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| State Covariates | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Observations | 79,111 | 102,676 | 125,595 | 170,188 | 79,111 | 102,676 | 125,595 | 170,188 |
| $R^2$ | 0.291 | 0.274 | 0.263 | 0.248 | 0.255 | 0.238 | 0.223 | 0.209 |

*Notes:* All models are two-way fixed effect regressions with directed-dyad and calendar year fixed effects. Withdrawing state-treaty two-way cluster robust standard errors in parentheses. *p<0.1; **p<0.05; ***p<0.01.

## C.4 Disjoint Sample

Figure 7 presents analyses in which I categorize ratifications and withdrawals as Direct Cost if the treaty has at least one security or economic UN-subject tag and as Diffuse Cost if the treaty has at least one human rights or environment UN-subject tag. However, as shown in Figure 22, many treaties govern multiple issue areas and these categories are not mutually exclusive. As a result, some of these ratification and withdrawals are categorized as both Direct Cost and Diffuse Cost. Here, I confirm that treaties spanning multiple issue areas are not driving my results. To do so, I exclude treaties from my analysis that are tagged by the UN as governing both economic or security affairs *and* human rights or the environment. This reduces my sample of withdrawals from Diffuse Cost treaties from 112 agreements to 60 and from Direct Cost treaties from 129 to 77. I also restrict my outcome variable to only include ratifications of exclusively Direct Cost or Diffuse Cost treaties. Results are presented in Figure 24. Figure 25 presents additional placebo analyses in which I move withdrawal artificially earlier by one, two, three, four, and five years. These analyses are consistent with the main results. Within issue areas, exit decreases cooperation by treaty members irrespective of costs. Withdrawals from direct cost treaties affect cooperation across issue areas. Withdrawal from diffuse cost treaties also appears to affect cooperation across issue areas; however, Figure 25 suggests some of this effect may be due to anticipation.

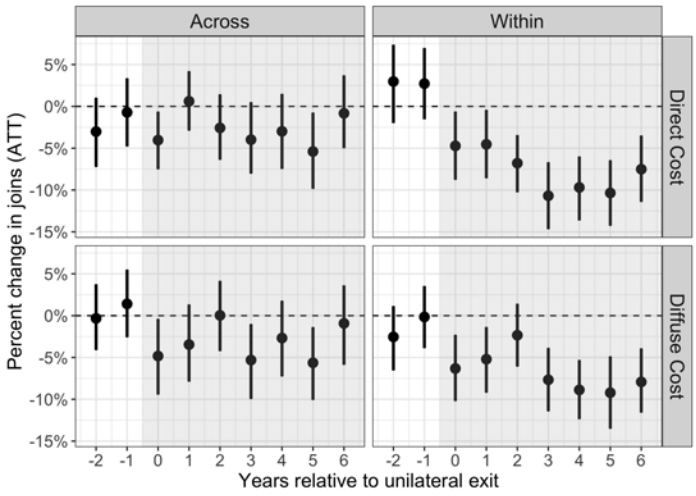



**Figure 24:** *Estimated Effects of Initial Unilateral Exit on Joins by Cost, 1945-2010.* Replication of Figure 7 with outcome and treatment variables restricted to exclude treaties including at least one Direct Cost and Diffuse Cost UN-subject tag; description otherwise the same as Figure 7.

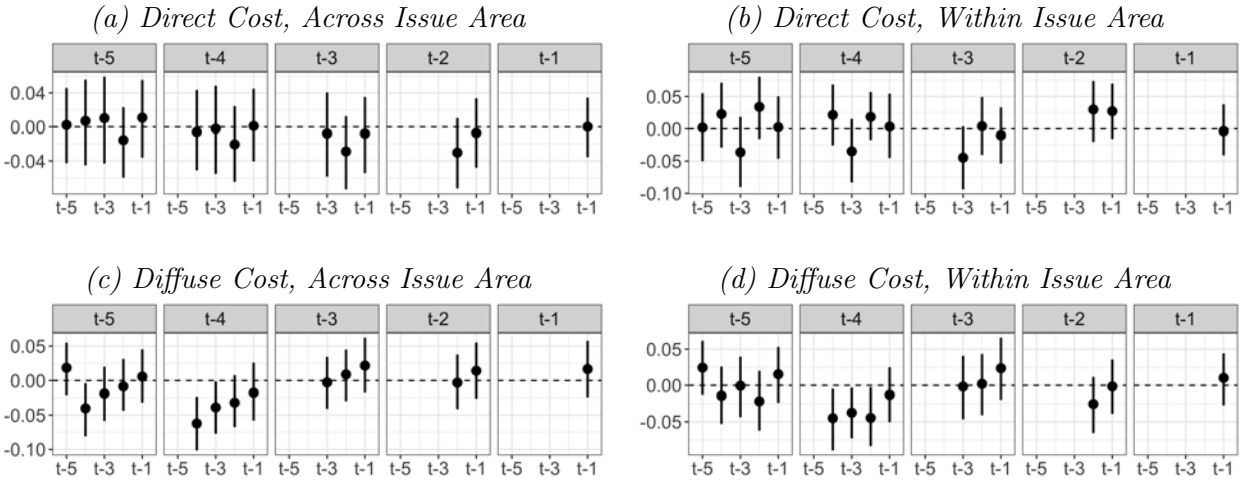
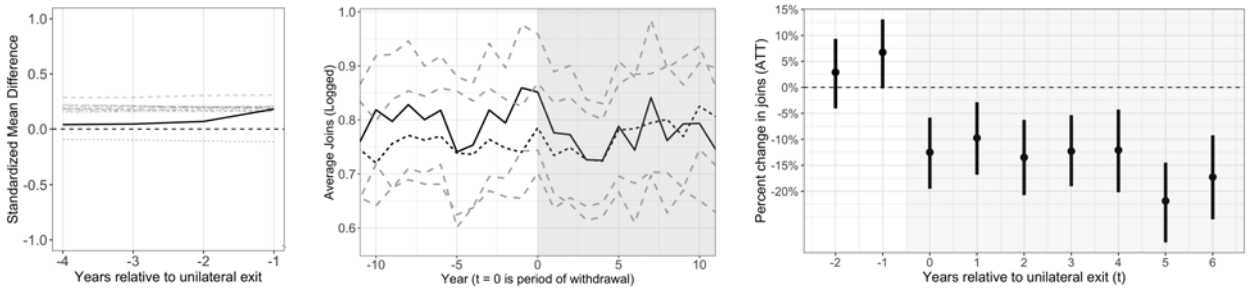


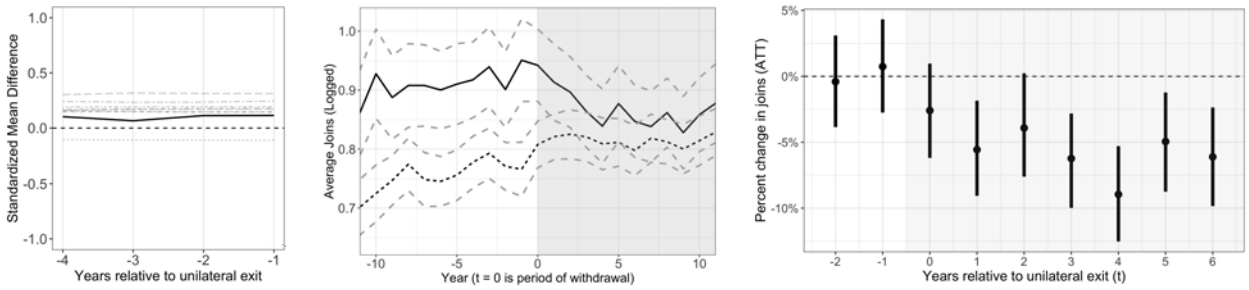

**Figure 25:** *Supplementary Placebo Analyses for Disjoint Analysis.* Analyses in which the year of withdrawal is moved artificially earlier by one, two, three, four, and five years. Corresponding results for the main issue area analyses are presented in appendix G.

# D Relational Consequences: Variation by Salience

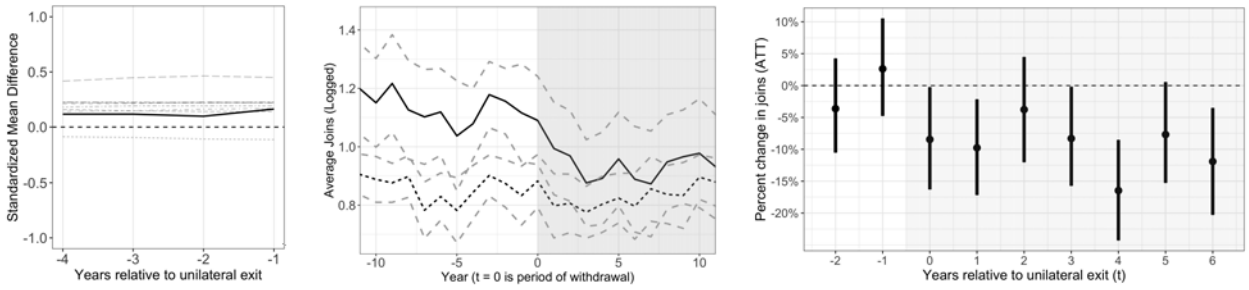
Figures 26 and 27 present the full set of analyses by salience. As in Figures 10 and 23, I present standardized covariate difference between treaty members and matched non-members (left), descriptive analyses of joins (middle), and corresponding difference-in-differences analyses (right). Note that the descriptive analysis of Major Power withdrawals shows a slight decrease in joins among non-members. This provides evidence that floor effects are not driving the minimal response of non-members in other analyses.



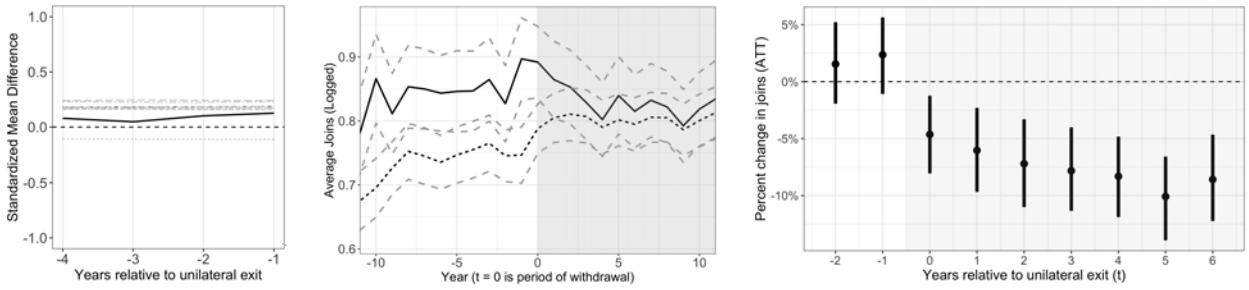

*(a) UNSG Treaty*




*(b) Not UNSG Treaty*

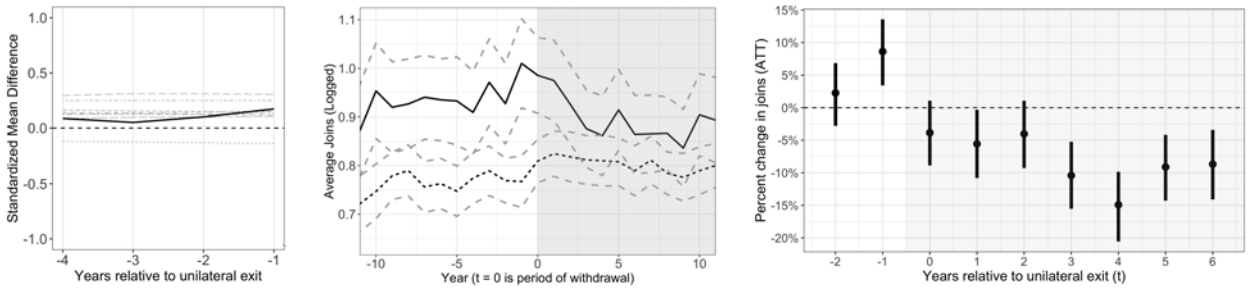



*(c) Major Power Withdrawals*

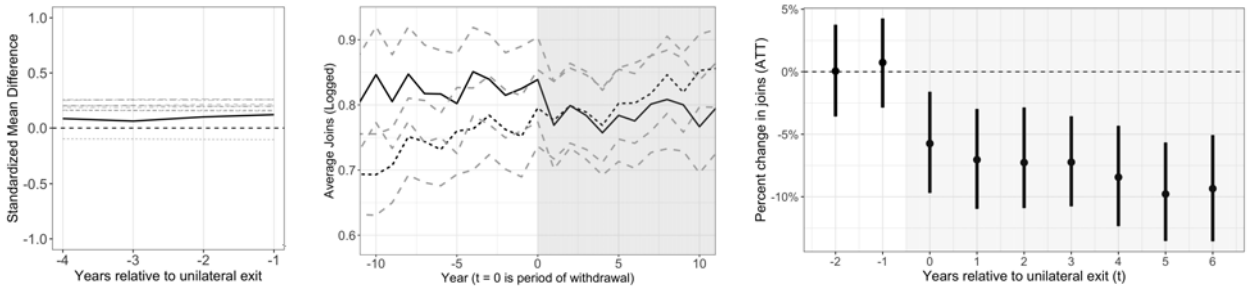



*(d) Minor Power Withdrawals*

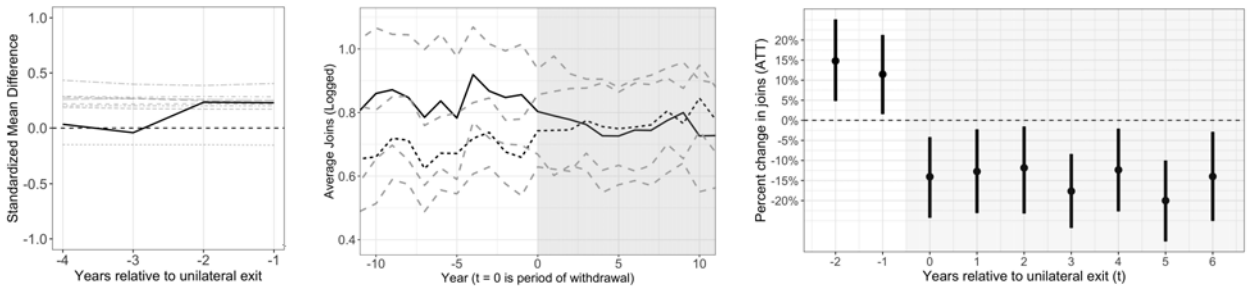
**Figure 26:** *Full Salience Analysis (1 of 2).* Figure presents covariate balance in the pre-withdrawal period between treaty members and matched non-members (left), descriptive statistics of joins by all treaty members and non-members before and after exit (middle), and difference-in-differences estimates (right) for each of the salience analyses presented in the article.



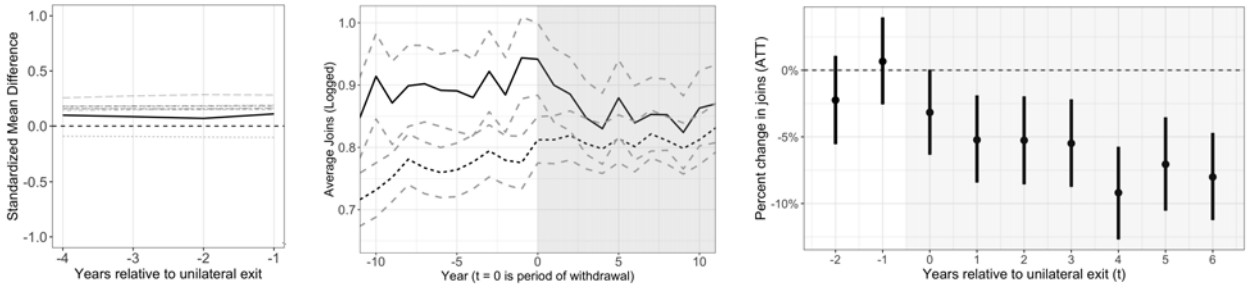

*(a) Small Treaties*




*(b) Large Treaties*




*(c) International Organization Charters*




*(d) Not International Organization Charters*

**Figure 27:** *Full Salience Analysis (2 of 2).* See caption of Figure 26 for details.

Figure 28 provides additional analyses illustrating of how the effect of unilateral exit varies by the membership size of the treaty of withdrawal. It presents a series of two-way fixed effects regressions in which Model (3) from Table 2 is applied to the set of 50 withdrawals closest to a given treaty membership size. Estimates are plotted sequentially. This analysis confirms that the effect of unilateral exit on cooperation increases with membership size. Treaties with fewer than 19 members do not show a statistically significant relationship between withdrawal and subsequent cooperation, while treaties with larger membership generally do display a consistent negative and statistically significant association.

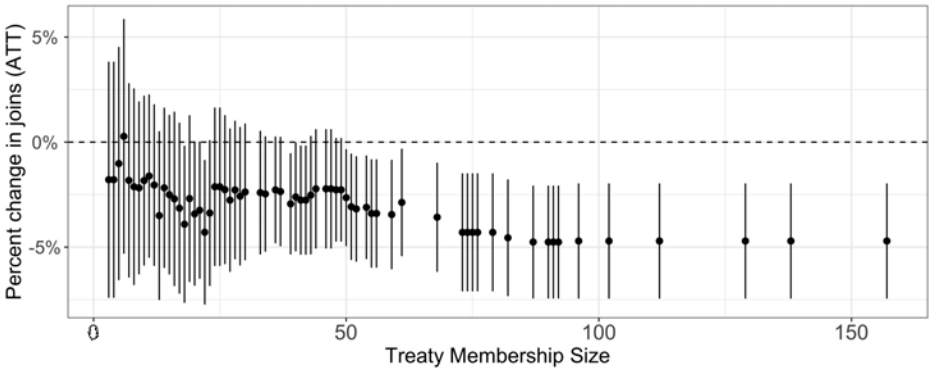



**Figure 28:** *Variation in Results by Treaty Membership Size, Two-Way Fixed Effects Estimates.* Black bars are 95% two-way (withdrawing state and treaty) cluster robust confidence intervals.

# E Complete Case Study

I complement my statistical analyses with a case study of France's withdrawal from the North Atlantic Treaty Organization (NATO) status of forces (SOF) treaty in March 1966 to examine mechanisms through within-case process tracing (Goertz, 2016; George and Bennett, 2005). This case is well-suited for evaluating causal processes, because there are only nine initial unilateral exits from security agreements suggesting the consequence of exiting these treaties may deviate from those in other issue areas (Seawright and Gerring, 2008).

France's withdrawal from the NATO SOF treaty is an instance of unilateral exit. The alliance included 14 state parties at the time of France's exit, all of whom remained in the treaty following France's departure.[28] France's withdrawal also coincided with the ongoing negotiations of several multilateral agreements, including the non-proliferation treaty (NPT), the Kennedy Round of the GATT, and the UK's accession to the European Economic Community (EEC) as well as intra-alliance negotiations concerning the offset crisis of 1966 and the nuclear sharing Multilateral Force (MLF) agreement. This provides an opportunity to assess how unilateral withdrawal impacted NATO members and non-members proclivity to join treaties with France.

[28] Parties to the NATO SOF agreement in 1966 were Belgium, Canada, Denmark, FR Germany, France, Greece, Italy, Luxembourg, Netherlands, Norway, Portugal, Turkey, UK, and USA.

France's withdrawal is a most-likely case for the byproduct hypothesis.[29] France's exit from NATO was no surprise. Campaigning in February 1958 de Gaulle declared "If I governed France, I would quit NATO" (Nuenlist 2011). De Gaulle worked to implement this agenda upon reelection. In September 1958, he issued a letter proposing to reorganize NATO into a tripartite directorate; in 1959, he withdrew France's Mediterranean fleet from NATO and then prohibited the stationing of NATO nuclear weapons on French territory; and, in late 1965, he proclaimed "I will not rest until the last American soldier has left Europe" (Ellison, 2006, 88; Schwartz, 2003, 94). NATO members began preparations for France's exit from the alliance in the summer of 1965, well before de Gaulle's formal announcement of withdrawal (*FRUS* 1964-1968 v13, 230-231).

French withdrawal was also costly and politically salient. French withdrawal undermined the deterrent threat at the core of NATO's mission, damaging the credibility of the alliance. Withdrawal also brought direct material costs. It removed the legal basis for the presence of allied military officers in France, expelling the alliance's headquarters from Paris and forcing the relocation of NATO to Brussels.[30] French withdrawal was also salient to NATO members and non-members alike. It garnered global media coverage and formed the context of de Gaulle's visits to Moscow and Phenom Phen in the summer and fall of 1966 in which he asserted French independence in foreign affairs, challenged US supremacy, and sought to establish France as a broker in the Cold War. Non-NATO states were aware of de Gaulle's withdrawal and able to incorporate it into assessments of the reliability of France's treaty commitments.

How did entry into multilateral agreements with France change following withdrawal? Figure 29 presents ratification trends graphically, representing the average number of joins by NATO members with a solid line, the same average for non-NATO states with a dotted line, and the post-withdrawal period as the grey shaded area. Figure 29 reveals that NATO members tended to ratify more treaties with France than non-NATO states in the pre-withdrawal period, as would be expected. Nonetheless, both groups' trends in ratification behavior are similar during the five years prior to 1966, when France withdrew from the NATO SOF agreement. There is then a drop during the next three years in average joins by NATO members relative to this average among non-NATO states. This relative decrease persists through de Gaulle's death in 1970.

These patterns provide suggestive evidence consistent with experiential theory. If anticipation of withdrawal or existing acrimony in diplomatic relations explained the change in ratification behavior, then the shift would have occurred prior to withdrawal. If the change in ratifications was a result of states learning about the unreliability of France's treaty commitments, then there would be corresponding shifts in both groups' ratification practices.

Figure 29 departs from the aggregate trends presented in Figure 4 in an important respect:

[29] Haftendorn argues that "[t]he French withdrawal from military integration, spectacular though it appeared at the time, was really just a symptom, not the cause of the crisis in NATO" (1996, 4).

[30] Secretary of Defense McNamara estimated "the cost of getting out [of France] range from $175 to $275 million. Some 75,000 Americans, plus 14,000 French civilians on the U.S. payroll are involved" (National Security Council, 1966).

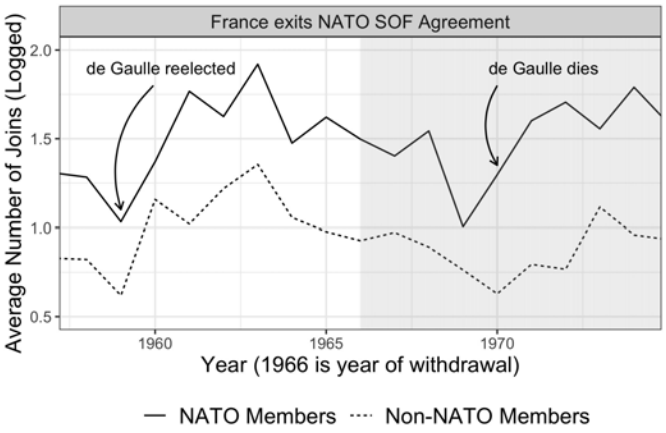



**Figure 29:** *Ratification of Multilateral Agreements with France, 1958-1974.*

NATO states' entry into treaties with France returned to pre-withdrawal levels six years after withdrawal, whereas aggregate trends never rebound. Some scholars argue that the "surprisingly benign" consequences of French withdrawal suggest that de Gaulle did not intend to subvert the alliance (Schwartz, 2003, 278-279). The historical record, however, indicates that withdrawal set in motion mechanisms capable of undermining cooperation between NATO members and France.

Because French withdrawal was anticipated, President Johnson attempted to pre-empt retribution by US officials. On March 2, 1966, after de Gaulle held a press conference suggesting that major decisions were forthcoming, but prior to an official announcement of withdrawal, the State Department issued a circular telegram to all NATO missions, Brussels, and USEC noting that:

> [W]e should lean over backward to be polite and friendly to France, to President de Gaulle personally, and to all French government officials. Backbiting, recriminations, attempts to downgrade the importance of France as a nation, or attempts at reprisals should be avoided no matter what the temptation... We should maintain our support for the Common Market, taking care that we do not seem to take the lead in any effort to isolate France (*FRUS* 1964-1968 v13, 112).

The telegram attempted to preclude US officials from ostracizing France. Johnson thus anticipated and sought to guard against the processes set underway by unilateral exit and the damage that it could do to broader US foreign policy objectives.

Although France's withdrawal was expected, NATO members nevertheless perceived it as a violation of France's obligations toward the alliance. In a March 31 memo analyzing France's exit, US Ambassador to France Charles E. Bohlen concluded that de Gaulle announced the withdrawal in advance of his June trip to Moscow so that his decision to "betray the Alliance" would not also be seen as colluding with the enemy and that French negotiations over the structure of NATO initiated by de Gaulle's 1958 letter had all been in bad faith, merely a "[r]use" meant to feign allegiance to the alliance and deflect blame for withdrawal (*FRUS* 1964-1968 v13, 351-353). Before withdrawal, Bohlen urged civility toward de Gaulle; after, he advocated retribution (Schwartz, 2003, 100).

Withdrawal angered other senior policymakers as well. In a White House meeting to formulate a policy response to de Gaulle, Under Secretary of State George Ball argued that de Gaulle had "repudiated a solemn agreement" (Schwartz, 2003, 105). After de Gaulle told Secretary of State Dean Rusk that American troops must leave France, Rusk replied, "Does that include the dead Americans in military cemeteries as well" (Schoenbaum, 1988, 421)? Canadian prime minister Lester Pearson said he had asked de Gaulle the same question (*FRUS* 1964-1968 v13, 452).

Despite President Johnson's instructions not to isolate France, policymakers sought greater concessions in treaty negotiations to punish France for breaking its commitment to NATO. Negotiations concerning the retention of French troops on German territory outside of NATO command structures is illustrative. At an April 4 meeting, senior US officials opted to pressure Germany to take a "hard line" by proposing negotiating terms unacceptable to France.[31] They decided that the "U.S. should urge [Germany] to incorporate in these new arrangements effective safeguards assuring their use in accordance with NATO requirements and an adequate quid pro quo giving other allies in Germany facilities in France such as transit and overflight rights" (Ibid.; *FRUS* 1964-1968 v13, 354). German Chancellor Ludwig Wilhelm Erhard welcomed the American terms and, echoing Under Secretary of State Ball, responded by comparing de Gaulle violations of "solemn agreements" to Hitler's actions "at the time of the Munich crisis in 1938" (Schwartz, 2003, 108; *FRUS* 1964-1968 v13, 366). He claimed de Gaulle was in a "difficult position" from which he would "suffer a defeat"; Foreign Minister Gerhard Schröder even suggested jokingly that Germany might cut France's water and electricity supplies if they refused to leave Germany (Ibid.). At the behest of the Belgian government, the UK dispatched George Thomson to NATO capitals to coordinate a united response to de Gaulle's challenge, resulting in the isolation of France from NATO's other members (Ellison, 2007, 38, 63-64, 68).

Meanwhile, Western-aligned non-NATO states did not respond to France's exit by questioning the reliability of its treaty commitments; instead, they remained conspicuously silent. Despite extensive coverage, *The Japan Times* did not report a single statement by Japanese officials on the crisis during March or April 1966.[32] The USSR responded with opportunism, not hesitancy about the reliability of France's commitments. The Soviet Ambassador to France, Valerian Zorin, responded by declaring the USSR would be happy to sign an alliance or non-aggression treaty with France (Ellison, 2007, 39). Two weeks later Soviet leader Leonid Brezhnev called for a summit on European security.

While these Soviet declarations were intended to capitalize on the rift between France and its NATO allies, they also suggest why trends in Figure 29 depart from the aggregate findings presented in Figure 4: France's withdrawal created diplomatic opportunities. The UK used the NATO crisis as an opportunity to revive its bid to join the EEC, capitalizing on

[31] Participants included McNamara, Rusk, Ball, and Dean Acheson, who had been appointed by Johnson to head the committee formulating a response to France; see, Schwartz, 2003, 107-108.

[32] Author analysis of all articles including the terms "France" and "NATO" published between March 1 and April 30 1966. Search identified 46 articles, including 20 on the front page.

the estrangement of France from the Community's five other members.[33] The US, similarly, leveraged the isolation of France from the EEC Five to push through the conclusion of the Kennedy Round of the GATT (*FRUS* 1964-1968 v13, 302). And with France sidelined and MLF negotiations abandoned, the US, USSR, and others were able to conclude the NPT, an agreement France would not join until 1992. The success of these initiatives depended on French acquiescence, which was achieved, in part, through isolation.

Another component was the extent to which other states attributed French policy to the unique personality of de Gaulle. There was a prevailing belief that NATO could wait out de Gaulle and that France would ultimately return to her place at the NATO table. It is therefore little surprise that states joining France in multilateral agreements begins to rebound around the time of de Gaulle's death in 1970. Even though the case deviates in some respects from the statistical findings, it validates the relational mechanism central to the experiential theory of international cooperation.

# F Leader-based vs. State-based Consequences

Case evidence reveals that NATO member cooperation with France rebounded after de Gaulle's death in 1970. This insight speaks to a fundamental debate in research on reputation formation: "to whom reputations adhere: states, leaders, or both" (Renshon, Dafoe and Huth, 2018, 325)? The current context provides an opportunity to advance this research by asking, to what extent do leaders or states take the blame for unilateral treaty withdrawal?

If leaders take the blame, then we should observe less of a decrease in cooperation by treaty members with states whose leadership changes after exit than with states whose leadership remains constant. This result would also provide some evidence consistent with the byproduct hypothesis, because it would suggest that changes in the withdrawing state's characteristics account for some of the variance in outcomes. If states take the blame, then we should observe similar effects across these two cases. This result would be consistent with experiential theory.

Testing this hypothesis is complicated by the possibility of post-treatment bias. If withdrawal impacts the probability of leadership change, then some of the effect of unilateral exit on cooperation could be absorbed (or magnified) by changes in leadership. Assessing whether leadership change affects the impact of withdrawal on cooperation requires, in effect, conditioning on a post-treatment variable. Given this challenge, I test for heterogeneity in treatment effects by leadership change in two steps.

First, I assess whether unilateral exit affects the probability of leadership change in the withdrawing state. To do so, I construct a country-year panel dataset and apply the same difference-in-differences estimator used in the main analysis to assess if unilateral exit impacts whether the withdrawing state experiences a change in leadership during the six-year post-withdrawal study period, as coded by the Archigos Dataset (Goemans, Gleditsch and Chiozza, 2009). To conduct this analysis, I match withdrawing states with non-withdrawing states by their treatment history (unilateral exit), outcomes (leadership change), major power

[33] Quoting Michael Palliser, the British Private Secretary for Foreign Affairs, Ellison refers to this as the "NATO-EEC complex" (Ellison, 2007, 61-66).

status, composite index of national capabilities, years since independence, polity score, and logged total trade in each of the four years before exit. I also conduct a placebo analysis in which I move withdrawal artificially earlier by two years. The results, presented in pane (a) of Figure 30, show that withdrawal is not associated with leadership change, suggesting concerns about post-treatment bias are not warranted.

Second, in pane (b) of Figure 30, I group exits based on whether the withdrawing state experienced a change in leadership during the six-year post-withdrawal study period and replicate the main analyses presented in Figure 5. Results show there is no substantive difference across, suggesting that leadership change does not mitigate the effect of exit on cooperation. The case of France may be an outlier; influential leaders are more the exception than the rule.

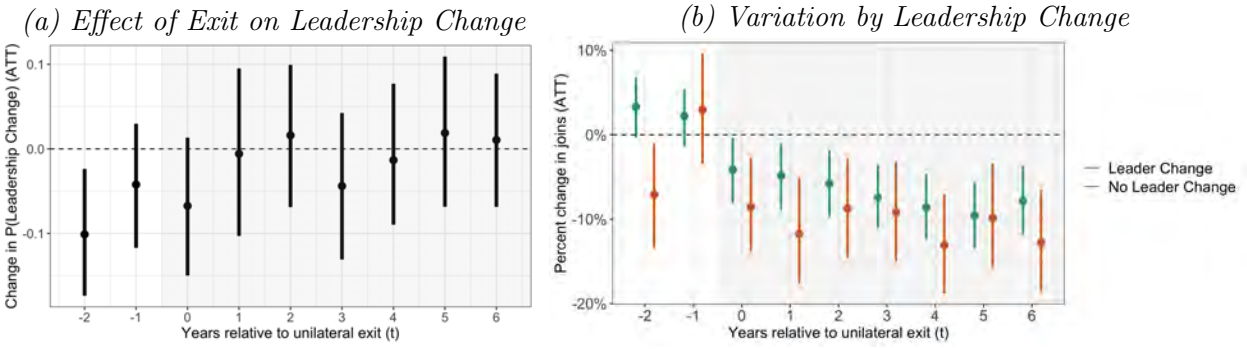



**Figure 30:** *Variation in Results by Leadership Change.* (a) Difference-in-differences estimates of the effect of exit on the probability of leadership change in the withdrawing state. Statistically significant estimates would suggest the possibility of post-treatment bias for analyses of heterogeneous treatment effects based on whether the withdrawing states experiences a change in leadership *after* exit. (b) Difference-in-differences estimates computed using the same models as Figure 5, but for subsets of exits in which the leadership of the withdrawing state either did or did not change during the six-year post-withdrawal period. Description is otherwise the same as Figure 5.

# G Supplementary Placebo Analyses

The decision to lead withdrawal by two years to test the byproduct hypothesis is arbitrary. To provide a more thorough test, Figures 31 and 32 present analyses in which I move the year of withdrawal artificially earlier by one, two, three, four, and five years. The results are clear: there is no consistent evidence that treaty members reduce cooperation with the withdrawing state relative to non-members prior to withdrawal. For example, the placebo at $t-4$ for the Major Power withdrawals, presented in pane (i) of Figure 32, provides some evidence of anticipation; however, this result it sensitive to the choice of lead, with all other analyses showing that cooperation does not decrease prior to withdrawal. No analyses provide consistent negative statistically significant estimates. There is scant support for the byproduct hypothesis.

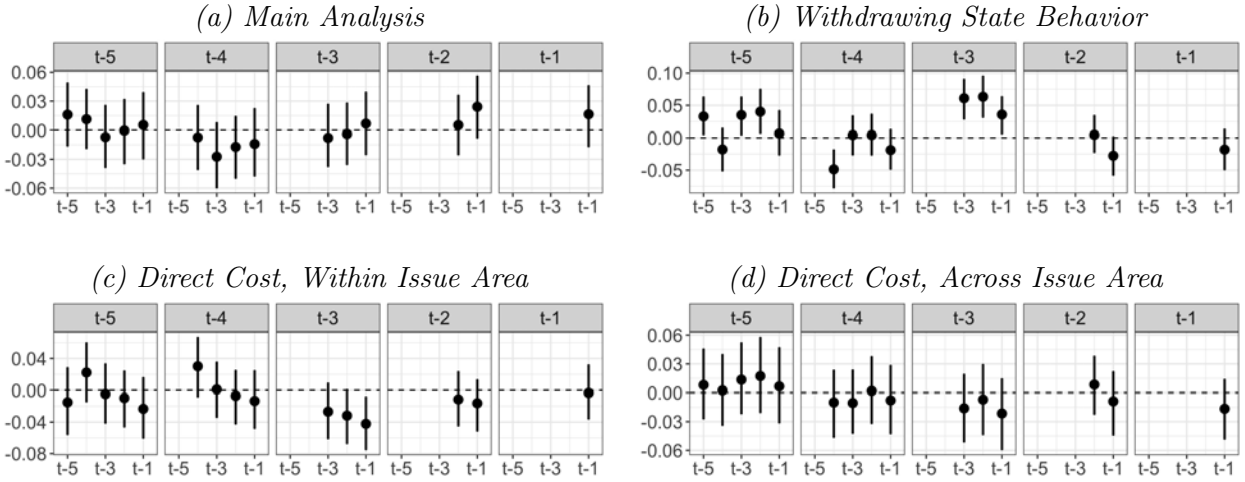



**Figure 31:** *Supplementary Placebo Analyses (1 of 2).* Analyses in which the year of withdrawal is moved artificially earlier by one, two, three, four, and five years. Results are presented for each analysis presented in the article.

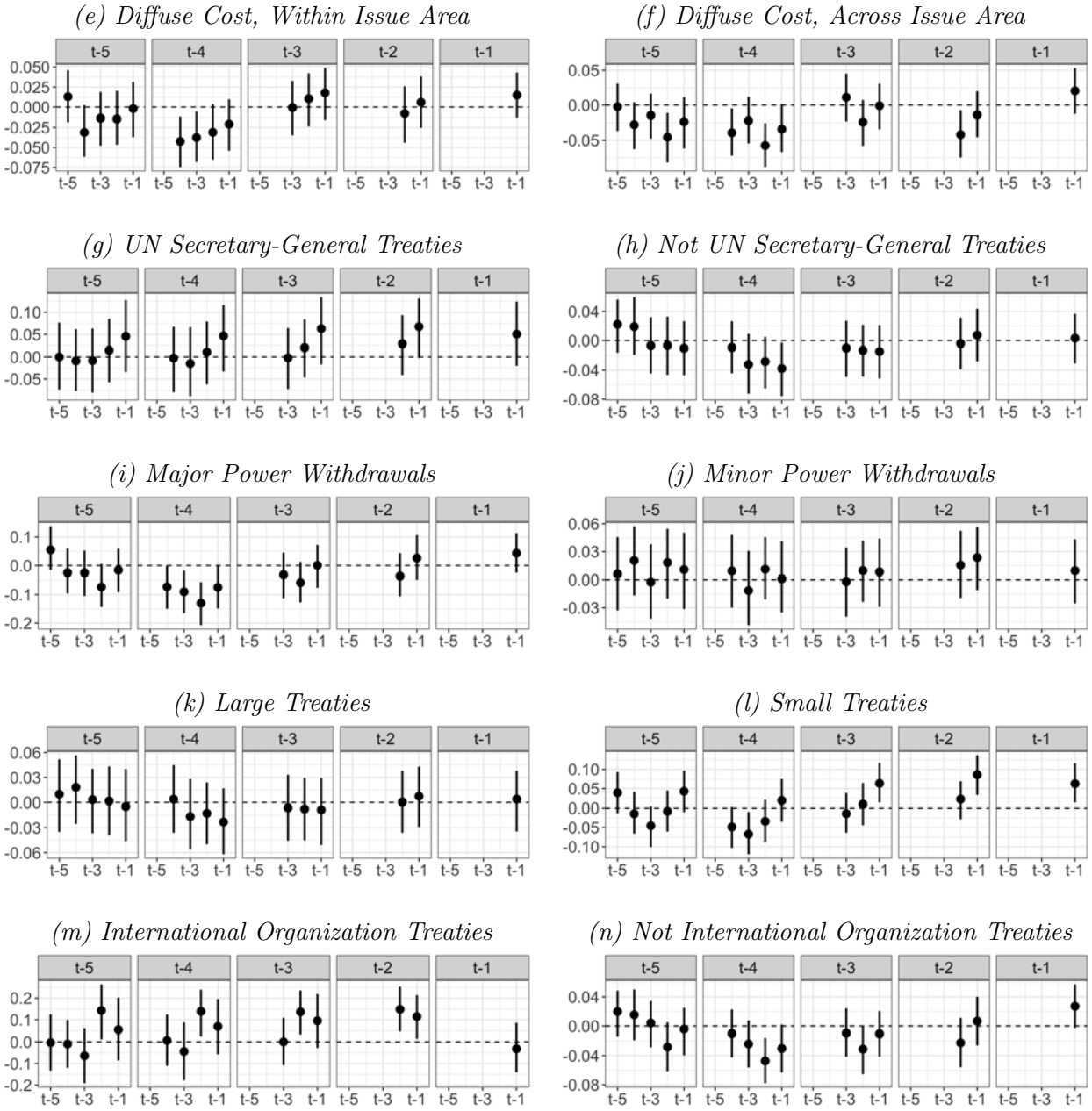



**Figure 32:** *Supplementary Placebo Analyses (2 of 2).* See caption to Figure 31 above.